DEPARTMENTS OF LABOR AND HEALTH, EDUCATION, AND WELFARE APPROPRIATIONS FOR 1964

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES

EIGHTY-EIGHTH CONGRESS

FIRST SESSION

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Part 2

Public Health Service

(Exclusive of National Institutes of Health)

Printed for the use of the Committee on Appropriations

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Department. More recently he had been with the State Department and I was able to get him back as executive officer for the Public Health Service. He is doing, I think, a fine job, sir.

There are, as you will appreciate, some other staff changes, Mr. Chairman, in program areas. We will mention these to you as they come up in discussion of various program areas.

General Statement

If I may, I would like to read my statement to you, Mr. Chairman, and proceed in this manner.

Mr. Fogarty. All right.

Dr. Terry. The total budget estimate of the Public Health Service for 1964 amounts to $1,710,762,000. This represents an increase of $128,766,000 over 1963.

The funds requested in the budget before this committee provide substantial increases for a number of health programs. In round numbers, they will step up community health services by $22 million. They will increase environmental health programs by $24 million. They will add $114 million to our current level for the National Institutes of Health, and over $2 million to our hospital and foreign quarantine programs.

COMMUNITY HEALTH

In the area of community health services, there have been several recent significant developments which have been reflected in the budget before you, Mr. Chairman. One of these involves a change in the method of funding, by including in community health appropriations for 1964 a group of research grants, certain training grants relating to dental and nursing resources, State control grants for cancer and heart, and project grants for cancer and neurological and sensory diseases. These were formerly contained in the budget of the National Institutes of Health. The programs involved will now be administered by the Bureau of State Services. This move is in accord with the directive of your subcommittee last year.

The change in financing includes in community health budgets those research and other grants which contribute directly to identifiable programs of community health. This change will permit more effective coordination of research and application, therefore facilitating the rapid, effective, and widespread availability of comprehensive health care and services.

As President Kennedy pointed out in his special message of February 7, 1963, on health, the United States has agreed to join with other nations of the Pan American Health Organization in an all-out effort to eradicate the yellow fever carrying *Aedes egypti* mosquito. The 1964 budget request contains $5 million to initiate a 5-year eradication program in those States where the mosquito still is to be found. We hope to enlist in this program voluntary assistance from nongovernmental organizations and institutions as well as from State and local health agencies.

The vaccination assistance program authorized by Public Law 87–868 enables grants to be made to States and their political subdivisions for an effective vaccination program against poliomyelitis, diphtheria, whooping cough, and tetanus. The urgency of this problem is demonstrated by the fact that of 20.3 million children under 5, only 6.4 million have received the vaccinations they need against these 4 diseases.

Our request for funds for initiation of the project is budgeted in a supplemental estimate for 1963. The 1964 budget includes funds for this program so that this new legislation may be fully implemented and the problem given proper attention.

Expanding national programs of medical research, which are producing new knowledge at a rapid rate, are already creating new and unexpected demands on national competencies in microbiology. These demands are not being met because many laboratories that provide medical technology services have not kept pace with research development. The budget before you reflects the national need for an accelerated laboratory improvement program in order to speed the diagnosis and treatment of communicable diseases and to narrow the gap between discovery and application of improved laboratory techniques and services.

One of the most serious health problems in the United States today exists among our 1 million agricultural migrant workers. Their needs for health care can rarely be met by the resources of communities in which they live for short periods each year. Public Law 87–692, enacted in September 1962, provides the means to help communities furnish needed services to these migrant workers. A supplemental estimate for 1963 has been submitted to initiate this program and the proposal now before you provides an accelerated plan to extend necessary and long overdue health services to these workers and their families.

Funds are also included in the estimate to intensify efforts to eradicate syphilis, in line with the recommendations of a special committee under the chairmanship of Dr. Leona Baumgartner that reported to us last year. As you know, there has been an ominous rise in incidence of venereal disease. Our request is designed to meet this new challenge.

The Surgeon General's Consultant Group on Nursing has recently completed its study and evaluation of the needs in nursing services and nursing education. Copies of their report have been sent to members of the committee. Although this budget estimate was not designed to carry out the recommendations made by the group, it does contain provision for some increased efforts in the field of nursing practices, especially through research grants and technical services.

Our request for community health programs continues the emphasis on assistance to the chronically ill and aged as specified in the Community Health Services and Facilities Act of 1961, with increases being requested for grants-in-aid and special projects. Particular attention is also being given both to early detection in disease control and on problems of long-term illness.

In the past year we have made considerable advances in our career training programs and we are planning to emphasize this phase of our activities even more in 1964. Public health workers in almost every field of competence are in short supply. In line with the recommendations of the Advisory Committee on the Public Health

Service Personnel Systems—commonly known as the Folsom committee—we have established career development programs in many parts of the Service and we intend to strengthen and expand these programs in 1964.

The proposed budget before you provides for more training and more fellowship activities directed toward the whole public health team which is composed of workers of all disciplines concerned with promoting, maintaining, or restoring health. Again, the acuteness of this need has been sharpened by the rapid increase in the total body of health knowledge through research.

ENVIRONMENTAL HEALTH

In the area of environmental health, our request for the coming year reflects again the interest we have in moving forward toward resolution of the health problems posed by our environment. There is a steady rise in the extent to which the rapid changes in technology and the accelerating movement of the population into metropolitan areas expose the population to these health hazards. Every day, actions by individuals, by industry, and by governments shape and change man's environment—and increase our responsibility for seeing that such actions are taken with due consideration to their health effects.

Only a few of these changes emerge dramatically into the public attention, but when they do they sharply illustrate the range and scope of environmental health problems. This past year has focused attention on the continuing effects of nuclear testing and our need to develop standards and standby measures for alleviating effects. The accidental sinking in the Mississippi River of a barge loaded with tanks of chlorine gas exposed thousands of people to a potentially deadly danger. The smog episode in London clearly demonstrated the acute health effects of polluted air.

I am pleased to report to you that we are making substantial progress on the construction of field facilities for our expanding environmental health programs. The Northeast and Gulf Coast Shellfish Sanitation Research Centers are now under construction and in 1964 will be in full operation. The Congress has authorized the construction of seven regional water pollution control laboratories and two water quality standards research laboratories. We are now engaged in various stages of planning for these laboratories. In 1964 construction will be underway for the southwest, northwest, and southeast regional water pollution control laboratories. By the close of 1964 we expect to award construction contracts for the Marine and Fresh Water Quality Standards Laboratories and the Alaska and northeastern regional water pollution laboratories. I am also requesting $500,000 in planning funds for the Arctic Health Research Center, which will be relocated on the campus of the University of Alaska in Fairbanks and which will work closely with our new water pollution research laboratories and other related scientific activities of the university.

A major step in the development of a comprehensive environmental health program is to provide a foundation of research and training activities which give support to all categorical programs. The vast technological changes in recent years have resulted in man being exposed to minute doses over long periods of time to chemical and physical agents which may be harmful to health. We have little knowledge of the biological effects of these exposures, and therefore, must undertake and support studies in such areas as human ecology, toxicology, pharmacology, and physiology to understand better the cumulative as well as the more immediate effects that these exposures are producing in man. I regard this area so fundamental and critical to our entire set of environmental health programs that I am recommending a new appropriation, "Environmental health sciences," to finance research and training for those science activities basic to all environmental health programs. This appropriation also includes arctic health research activities formerly funded in another appropriation.

ENVIRONMENTAL HEALTH CENTER

The variety, complexity, and interrelationship of our environmental health problems is a compelling reason why a major item of our request this year provides for a National Center for Environmental Health. It is from such a focal point that I believe we can best provide the leadership for national programs of environmental health.

Last year, a request for planning and site acquisition for environmental health facilities in the Washington area was considered by the Subcommittee on Deficiencies. Because of the many questions raised on the Washington area location, the committee denied the request and its report suggested that the request for planning and site acquisition funds be submitted to your committee at this session for further study. The proper location for the National Center for Environmental Health has been the subject of prolonged study by a number of advisory groups. The consensus of these groups, including the President's Science Advisory Committee and the Committee on Environmental Health Problems chaired by Dr. Paul M. Gross, is that such a facility should be located in the Washington area.

We have been gratified at the support Congress has given to providing field facilities for those environmental health activities which can best be carried out in separate facilities located strategically throughout the country. With these, we have a need for a national center where our total environmental health efforts can be coordinated, administered, and developed.

The Public Health Service has frequent or occasional contacts on environmental health matters with at least 25 Federal agencies whose headquarters or principal laboratories are in the Washington metropolitan area. A wide variety of agencies with environmental interests look to the Service for technical assistance on health matters. Furthermore, at least 180 national scientific societies, professional organizations, and trade associations with significant interests in the field of environmental health, maintain either headquarters or major offices in the metropolitan area. Thus, we have an important reason to concentrate our environmental health programs and technical leadership here.

Also, the Public Health Service is currently operating 22 regional specialized laboratories in support of environmental health programs, and has 11 additional facilities authorized and under construction or in the active planning stage. Experience has demonstrated to us that effective technical direction and coordination of the research and development activities of these scattered field stations require a highly skilled central staff. Finally, if we are to mount a broadly based, comprehensive, and effective attack on health hazards associated with the environment, we urgently need modern facilities, centrally located, to house the scientific and leadership personnel. Without such facilities, Mr. Chairman, we cannot hope to attract and retain the highly skilled manpower that will be needed.

WATER POLLUTION CONTROL

Water pollution and water supply continue to be a matter of primary concern to us, and our request for next year provides again for an expansion of all activities in this area—especially in furtherance of the President's natural resources message. That message, as you know, called for the development of comprehensive plans for all the major river basins in the Nation, and in 1963 we are initiating a new basin study on the upper Ohio River as well as continuing our studies on five other river basins. In 1964 we plan to continue these studies and initiate four new projects in the tristate metropolitan area of New York, New Jersey, and Connecticut, in the southeastern river basins, the lower Missouri River Basin, and the New England river basins. These activities conform to a schedule which will permit us to have underway studies in all the 21 major river basins by the end of 1970. In view of the broad mandate we have under the Water Pollution Control Act to concern ourselves with the preservation and improvement of the quality of water resources for all legitimate purposes, these river basin studies are of high priority.

Additional funds are also being requested for an expanded enforcement activity. Since 1956, enforcement actions have been taken in 20 geographic areas involving 28 States and the District of Columbia. Enforcement actions during this time have resulted in remedial action involving over 300 industries and 300 municipalities. More importantly, they have stimulated the initiation of voluntary action on the part of State and local governments to implement corrective measures to control pollution.

The waste treatment plant construction program is continuing to show its effectiveness in helping individual communities reduce their water pollution problems. For 1964 an increase of $10 million to the maximum authorization of $100 million is being requested for these grants. Although good progress has been made during the past year with new waste treatment plants under the supplemental assistance of the accelerated public works program, we still need to continue a real push here.

RADIOLOGICAL HEALTH

In the field of radiological health, the past year has seen substantial progress in expansion and refinement of our national capability to identify and measure levels of radioactivity in the environment. The need for greater effort toward this objective has been emphasized by the continuation of nuclear weapons testing superimposed on the already existing problems growing out of increased peaceful uses of nuclear energy and increased uses of X-rays and other radiation sources in the medical and dental professions.

Particular progress has been made in the coordinating of Public Health Service capabilities with those of other Federal agencies in this effort and in encouraging and assisting the States to increase their capability for participation in a national surveillance and measurement program. The program of State program development grants has greatly enhanced the value of our technical assistance activities and stepped up technical and professional training to provide more specialized personnel to carry on this work.

AIR POLLUTION CONTROL

I am sure the members of this committee are aware of several developments which have occurred with regard to air pollution during the past year. In accordance with the provisions of Public Law 86–493, I submitted a report on "Motor Vehicles, Air Pollution, and Health" to the Congress in June 1962. The report contains evidence that automobile emissions make an appreciable contribution to overall air pollution and produce harmful effects on human beings and on plants and animals of economic importance. This finding underscores the need for intensified research on more fundamental approaches to reducing automotive emissions through improved design and performance of engines and equipment. This year we propose to put some research funds into the investigation of some engine modification ideas which could assist the automotive industry in their efforts to discover and develop beneficial changes.

Again this winter, Great Britain was struck with an air pollution episode, with appalling results in terms of lives lost and serious economic damage. I sent an expert observer from our Division of Air Pollution to London during this episode. He found that the control measures which the British instituted, based on national legislation enacted in 1956, served to reduce appreciably the harmful health effects inherent in such an air pollution situation when compared to a similar episode in 1952.

The need for preventive public measures was pretty well recognized by nearly all of the 1,400 participants at the National Conference on Air Pollution which was held here in Washington last December. Although the need for more research in this difficult and complex area was virtually a consensus, the predominant theme of the Conference was that the time had come for a far more vigorous application of available technical knowledge.

NATIONAL HEALTH SURVEY

The national health survey continues to produce a variety of information on the extent and character of disease and distribution and trends of illness in the population. Late in 1962, health examinations were completed on a national sample of adults. A scientifically selected sample of some 7,700 adults, aged 18 through 79, produced 6,700 persons examined for a response of around 87 percent. Examinations were conducted in mobile clinics in 42 locations around the country. Fieldwork was finished early in December, and statistical analysis of results is underway.

Plans for a second phase of health examinations, of children aged 6 through 11, are well along. This project will be inaugurated next

July and over a 2-year period, some 8,000 children will have special examinations.

PUBLIC HEALTH SERVICE HOSPITALS

Most of the patients who receive care in our Public Health Service hospitals do work that is vital to the Nation's defense and prosperity—American seamen, the U.S. Coast Guard, Coast and Geodetic Survey, and others.

These hospitals are now conducting major research in heart disease, cancer, diabetes, and many other fields. We are requesting a small increase in funds to increase the clinical research activities previously authorized by the Congress.

Most of our hospitals are associated with leading medical schools, and several are conducting research in cooperation with the schools.

One of the very important functions of our hospitals is the recruitment and training of medical officers and other health personnel for the Public Health Service. Last year 250 interns and residents received training with us. Nearly all of our own medical officers have received at least some of their training in the Service hospitals. We are requesting funds this year to establish additional specialty services in three of the major hospitals.

FOREIGN QUARANTINE

In reporting on our foreign quarantine activities, once again I am pleased to be able to report to you that there were no outbreaks in our country of quarantinable disease introduced from abroad, although smallpox, yellow fever, and cholera took the lives of many thousands in other lands. We must continue our vigilance, for these diseases are only a few hours away from our doorstep, even when they are on the other side of the world.

For fiscal year 1963 the Division of Foreign Quarantine received additional funds for the medical examination of visa applicants. As a result, we have improved the quality of the examinations performed abroad and increased the consultative supervision of physicians locally employed who examine visa applicants overseas. Funds collected for these examinations reimburse the Government for the cost of the service.

Funds are requested for rental of space at international airports, for quarantine services, in accordance with legislation, Public Law 87–255.

I would like now to review with you our progress and our plans on two across-the-board activities of the Service. The first is communications; the second, our programs oriented especially to the needs of and services for the aged sick.

COMMUNICATION OF RESEARCH FINDINGS

Last year this committee called upon us to take action to improve the communication of research findings to scientists, health practitioners, and the general public.

I am happy to report that substantial progress has been made toward this end. With your permission, I should like to submit for the record a detailed report of the actions that have been taken on a Service-wide basis in the general field of communications.

(EDITOR'S NOTE.—Report referred to is printed in this volume beginning at page 54.)

Two points of special significance have emerged from the intensive review which we have given to our communications activities during the year. First, the amount of activity in communicating scientific and technical information to scientists, health practitioners, and the general public is already substantial and varied as is noted in the report; second, in the process of expansion we have encountered areas of uncertainty with respect to our legislative authority which we believe may need clarification.

The President in his health message touched upon the possible need for this additional legislation; and we are at present giving the question very careful study.

We would agree, I am sure, that the improvement of communications in the health sciences by the Government and by private agencies is a matter of current and vital concern. In scope and complexity, it represents a health problem of major dimensions.

As this initial report, I believe, indicates, it is a problem which the Service takes—and will continue to take—very seriously in the years ahead.

ACTIVITIES RELATED TO HEALTH OF THE AGED

Throughout the Public Health Service there are now scattered hundreds of projects whose goals are the restoration and rehabilitation and the health care of the aged sick. At the National Institutes of Health, alone, there were in 1962 more than 800 projects in progress, either intramurally or supported by research grants. Many of the research grants are being administered by the Center on Research in Aging. Other projects are going on in the National Cancer Institute, the National Heart Institute, the National Mental Health Institute, and other Institutes. These same institutes also are administering grants to other research installations outside the Federal establishment.

All of these research projects have to do with the aging process itself as well as with those afflictions which traditionally beset the aged.

For the care of the aged sick, the past year has seen a tremendous upsurge in the construction of nursing homes and chronic disease hospitals, in diagnostic and treatment centers, in rehabilitation facilities, in general hospitals and public health centers. This construction was made possible by Federal aid under our Hill-Burton program.

The aged sick who do not require hospital care are also the chief beneficiaries under the Community Health Services and Facilities Act of 1961. Under this new program, States last year spent almost 5 million additional Federal dollars which were matched by $2.5 million in State and local funds for health services to the elderly, 80 percent of whom suffer from one or more chronic conditions.

In addition, studies, demonstrations, and experiments are going on under the Community Health Services and Facilities Act in order to discover better methods for caring for the sick outside of hospitals. Many of these projects are looking into such matters as how communities can coordinate their programs in order to meet the full range of preventive, curative, and restorative services to the greatest benefit of their older people.

Training programs in many components of the Service have been extended and redirected to the health needs of the elderly. For example, we have been active in designing training programs for nursing home administrators in a wide variety of fields. We have conducted workshops in various parts of the country for practical nurses and student nurses in the care and rehabilitation of the severely disabled. We have provided grants to schools of public health and other institutions for graduate training of nurses in geriatric nursing. This past year we aided 11 dental schools in setting up studies on how best to teach dental students in the care of sick and elderly patients.

I give you this lengthy rundown to demonstrate the amount and variation of our activity in this most important field. We are today spending millions of dollars appropriated by the Congress and employing thousands of personnel in many hundreds of communities to devise ways and means so that we might better understand and better meet the needs of the aged sick.

We propose to do more. We propose to extend even more concentrated effort in all of these areas in 1964. So that we may receive the fullest possible benefit from this effort and avoid any unnecessary duplication, I have set up a Service-wide committee on aging. This committee will be responsible for maintaining close coordination of all activities in the Service which are directed toward the health problems of aging and the aged.

RESEARCH ACCOMPLISHMENTS

In considering medical research we must measure it eventually in terms of progress toward improved health of the American people. This committee knows that this requires the perspective given by passage of time. Important advances in research are made every year, but it is the cumulative total of such advances that brings the big payoffs.

Earlier detection and better treatment found through madical research have resulted and are now saving the lives of one out of three cancer patients instead of one out of four which was the rate only a few years ago.

A payoff in two communicable diseases—measles and German measles—seems now to be close at hand. For measles we have both live and killed virus vaccine which will soon be available and which should, within another year or two, bring an all too common and often dangerous childhood disease to the vanishing point. In the case of German measles, it is gratifying to know that scientists have developed and are testing a vaccine which will prevent the disease and consequently its threat of damage to unborn babies. This advance comes through developments following on the research which, last summer, culminated in identification and isolation of the virus of German measles.

Prevention of still another disease, malaria, seems promised through a new drug. A single injection of this drug has given protection almost 10 times longer than any other antimalarial. If the promise of the preliminary trials is borne out the drug will be particularly important because the other antimalarials on which we have relied since World War II are beginning to lose effectiveness in both curing and suppressing the disease. This finding will benefit not only our own people but hundreds of millions of our friends around the world.

Taking a long look at research benefits in control of another disease, the Nation's No. 1 killer, heart disease, we find further encouragement. The past year has seen a continuation of a 10-year decline in the death rates for three categories of heart disease. These are rheumatic fever and rheumatic heart disease; hypertension with or without heart involvement; and nonrheumatic chronic endocarditis and other myocardial degeneration.

I leave more specific reports of research advances in the health field to Dr. Shannon and his associates at the National Institutes of Health. The record of progress is impressive.

ADMINISTRATIVE CHANGES

A number of changes in administration of our health research efforts have been made in the past year with the objective of bringing even greater benefits, and bringing them more quickly, to the American people. One such change is the establishment, authorized by the 87th Congress and now effected, of two new Institutes: the National Institute of Child Health and Human Development and the National Institute of General Medical Sciences.

We have been fortunate in obtaining Dr. Robert A. Aldrich, formerly professor and chairman of the Department of Pediatrics of the University of Washington School of Medicine, as Director of the Institute for Child Health and Human Development.

The Institute of General Medical Sciences is an outgrowth of the former Division of Medical Sciences and, again, it is our good fortune that Dr. Clinton Powell, Chief of the former Division, will be the Institute Director.

In addition, a new Division has been established within the National Institutes of Health. This is the Division of Research Facilities and Resources which brings together in one administrative organization a number of programs in which the Congress has expressed special interest and for which it has given substantial support, such as health research facilities construction, general clinical research centers, regional primate centers and regional centers for biomathematical studies requiring computers and other large and costly tools of modern sophisticated research.

MENTAL RETARDATION AND MENTAL HEALTH

In the fields of mental retardation and mental illness and health, we plan to push ahead with all possible speed, using the full resources of the Service toward the end that we learn at the earliest possible date how to prevent mental retardation, cure mental illness, and promote mental health. In his special message to the Congress on mental illness and mental retardation, the President has directed that no stone be left unturned to lessen the grave emotional and financial burden of such conditions. As you gentlemen know, the Public Health Service for some years has been deeply involved with research in both these areas and, more recently, in steps to provide more manpower and more facilities for the care of the mentally ill and mentally retarded. All programs concerned with mental conditions will receive even greater emphasis in 1964.

RESEARCH GRANTS PROGRAM

The growing extramural programs, to which a very large proportion of our appropriations is devoted, present complex and difficult administrative problems, as the Congress is well aware. The Public Health Service, largely through the National Institutes of Health, has in the past year made substantial strides in grants management. Significant improvements have been made in our own procedures, the responsibilities of the grantee institutions have been clarified, and administrative requirements have been formally made known to the grantee institutions. A specific example is the issuance in December 1962 of a grants manual setting forth clearly both policies and requirements. This is in a format which will permit additions and revisions as necessary at any time.

The Association of American Medical Colleges, representing probably the majority of the grantee institutions, initiated and held a series of seminars last year and early this year in which National Institutes of Health administrators have actively participated. These are resulting in very useful exchange of views and are increasing understanding of the problems and leading to the improved management methods desired.

With this in mind I have appointed Dr. Ernest Allen, formerly assistant director in charge of research grants at the National Institutes of Health, to be grants policy officer for the Public Health Service. Dr. Allen, as members of this committee know, has been with the NIH extramural program almost since its beginning. His appointment to this newly established position brings to the Service generally a wealth of knowledge and experience which will be of immeasurable benefit in our activities in this area.

In conclusion, I believe that the budget before you is a sound one. We have endeavored in our best judgment to reach conservative estimates of what is required to meet carefully developed objectives. I appreciate very much, Mr. Chairman and members of the committee, your interest and forbearance and I shall do my best to answer fully any questions you may have.

Mr. FOGARTY. Thank you, Doctor.

Was the Folsom report completed?

IMPLEMENTATION OF FOLSOM REPORT

Dr. TERRY. The Committee report was completed, yes, sir, and has been used as our guideline in terms of adoption of personnel practices and organization in the Public Health Service. All of the recommendations in the Folsom Committee have not yet been carried out. We have been reviewing them carefully and taking those steps which we have been able to.

As an example, one of the things which we are doing, and completed already in some areas in the Service, is to delegate, insofar as consistent with the need of the Service and governmental practice, personnel responsibilities to the bureaus and divisions. I think one of the important things in this respect is in terms of making the people in immediate supervisory positions feel more directly their personnel management responsibilities.

Another thing that we are in the process of developing at the present time, and some are already set up, are career development programs. Over the recent years, Mr. Chairman, our career development programs in the Public Health Service have been almost nonexistent. True there has been career development activity, but it has not been a planned program. Consequently, I think one might say that our personnel in the Public Health Service, our professional, high-level technical personnel, is thin in the middle. In other words, I think we have a lot of promising young people at the intermediate level. We do not have the large number which we need for active program direction. We are attempting to combat this problem in several ways, but one is in terms of the establishment of career development programs. We have already established one in administration and management, in dentistry, in nursing, and we are working on others in other categorical areas.

The third thing we are doing in relation to the Folsom Committee report is in terms of what one may call billet analysis, descriptions of the positions in the Public Health Service, particularly at the higher levels, in terms of having a clear-cut description of these positions. This will aid us in filling vacancies as they occur with people who will fit and integrate in the activity better.

There are other activities and studies which we are also carrying out in this area. We expect to continue to use the Folsom report as an advisory report and as a guideline document in future development.

Mr. **Fogarty**. Do you find yourself in major disagreement with any of the recommendations of the Folsom Committee?

Dr. **Terry**. There are no major disagreements.

Mr. **Fogarty**. I think you made a real good selection when you selected Mr. Folsom to head this study. I do not know of anybody who could have done a better job heading this committee, with his vast experience in Government and private enterprise. He has served both administrations well.

Dr. **Terry**. He was backed up, as you know, by a very fine committee of four from industry, from educational areas, and very outstanding people. It was a real fine committee.

If I may, Mr. Chairman, I would like to mention, also, that at the present time before a House committee, Mr. Rivers' committee in the House, hearings are taking place on the administration proposal for military pay which is the complementary part of the proposals in civil service which were partially enacted by the Congress last year.

Hearings are going on now. As a part of the uniformed services you realize that our commissioned officers' pay is tied to the pay of the military. We hope Congress, in this session, will come up with pay changes which will more adequately meet our needs in the commissioned corps.

Mr. FOGARTY. I hope so, too. We have been talking about this for a long time and have not done much about it.

DEVELOPING BETTER COMMUNICATIONS

I note that you are giving high priority to the problem of communications. Do you think you have gone far enough in this? I disagreed with the Secretary when he was here. I told him at the time I did not think he was going far enough. I had just read an article by David Sarnoff in the Saturday Evening Post of February 16.

Dr. TERRY. I am quite well acquainted with it.

Mr. FOGARTY. Are you acquainted with the article?

Dr. TERRY. I am quite well acquainted with the article and with other recommendations. Almost 2 years ago—I believe it will be 2 years ago this spring—he put forward many of these proposals, I believe before the National Health Council in one of its regular meetings.

I think it is an awfully difficult question, Mr. Chairman, to answer dogmatically as to whether we are doing enough. But frankly, I believe we likely are doing as much as we can constructively on a well-planned basis before jumping at additional things.

Mr. FOGARTY. I do not mean jumping, but I mean planning some of these things. Some of these things will take 8 or 10 years to get into operation.

GENERAL SARNOFF'S WORLD TELEVISION PROPOSAL

One thing I quoted to the Secretary was that General Sarnoff visualized the setting up of a Television Medical School of the World enabling doctors in every country to watch surgical operations, hear lectures, and observe demonstrations by the world's leading practitioners, over closed-circuit television broadcasts in full color. World-wide medical television would permit a heart specialist in London to examine a patient, display on the television screen his X-rays and cardiograms, and discuss a diagnosis with heart men in New York, Paris, Berlin, anywhere.

Do you think he is just dreaming or do you think there might be something to this?

Dr. TERRY. Of course he is dreaming, but some dreams have realistic projections. I don't see this quite immediately, as he infers.

Mr. FOGARTY. We used to say the same thing about television, did we not?

Dr. TERRY. I suppose so, Mr. Chairman. I don't think there is any question but there is a great deal to be done in this area in utilizing the communications media, television, radio, and audiovisual tapes, films, and that sort of thing. We are moving ahead. We have many studies going on in this area.

Mr. FOGARTY. I would think something like this would be feasible for this country, if not right now for the world.

I do not know much about the technical problems in this; but I read this thing two or three times and I thought maybe 8 or 10 years from now it would not be called a dream.

Dr. TERRY. I think it is entirely possible, sir.

Mr. FOGARTY. Everything is changing so much these days. We were told the other day that in education the teaching of physics at the high school level has been completely changed in the last 2 or 3 years. The same thing is going on in the field of biology and other fields.

Dr. TERRY. Including chemistry.

POSSIBLE USE OF ELECTRONIC STORAGE OF MEDICAL DATA

Mr. FOGARTY. He also foresaw the time when great central computers, storing medical data in their electronic memories, would serve as an instantaneous source of information for any doctor needing to know the latest developments in his specialty. Similar computers could also store away the medical records of every person who had been under a doctor's care. By dialing a patient's code number, he said, a physician in Seattle could obtain the complete medical history of a patient who might have received his previous treatments in Miami, Houston, and New York.

It sounds possible, doesn't it? Some day?

Dr. TERRY. Oh, I wouldn't say it is not possible.

Mr. FOGARTY. I understand you can't give definite answers to these things. I am just exploring this a little bit. I don't think we should treat this as being just a big dream. Certainly, he is a person who is an expert in the business of communication.

COST OF CONTINUOUS WORLDWIDE TELEVISION

Mr. LAIRD. Whether you are going to spend $12 billion or $15 billion on this program at this time is a question the administration has decided in the negative. I am sure our committee will not now want to fund the program because of the uncertainties. It is a very expensive program, Mr. Chairman.

Mr. FOGARTY. Oh, I know. Everything is expensive these days, but I just don't happen to be as concerned about the expenses of things in this area, as some folks are.

Mr. LAIRD. The TELSTAR gives us about 15 minutes per day and in order to have continuous transmission, you have to have a minimum of 42.

Mr. FOGARTY. Isn't that TELSTAR that is working out there now?

Mr. LAIRD. You cannot have continuous transmission. You get about 15 minutes a day, or a half hour at the most, but it takes 42 of them to give you continuous transmission.

Mr. FOGARTY. It has quite a buildup, though, this last year in Congress.

Mr. LAIRD. As far as funding that program in this budget, there is no request from the administration for that particular program right now.

Mr. FOGARTY. There isn't?

Mr. LAIRD. No. You see, that is a Defense program.

Mr. FOGARTY. Oh, yes.

Well, as a practical matter, perhaps we ought to see what we can do on a continuous closed circuit transmission here in the United States. That hasn't been perfected.

But I think we should be doing some planning. I thought some of these things that he talked about made sense. I don't care if it would cost a lot of money if it would accomplish what he thinks it would.

Mr. LAIRD. Bell has got a similar proposal. Of course, Bell Laboratories have done some work in this area, and they have similar proposals to RCA's proposal. There are about four or five different contractors that are in this area with proposals similar to this which could be used for medical purposes, too. You can use them for anything, once you get them up.

Mr. FOGARTY. He says:

> Science is changing the world, and most Americans neither know nor care how these changes are being brought about. Today every officer of Government, every lawmaker, is confronted with all sorts of scientific and technical developments which affect the political, economic, and social problems that are a Government's main concern. A businessman, no matter what his field, is confronted every day with technical and scientific breakthrough that may threaten him with disaster—or hold out the promise of great achievement. Yet lawmakers and businessmen alike must turn for advice to technical people whose language they may not even understand.

As far as I am concerned, he is completely right. I don't understand these machines that do all these things today. What I was wondering is: Have you given any consideration to some of these maybe far off ideas?

Dr. TERRY. We have not given specific consideration to that. We have specifically considered questions of a radio network, in terms of methods of disseminating information through radio programs over the country. I think certain of these areas—frankly, I don't believe that we have authorization, legislative authorization, which would allow us to do that today. I think we are a little distance from it yet in terms of being ready. None of these machines are any better than the human element of what is fed into it. One has to develop this to go along with the machines to be most productive.

I don't disparage this article at all. It is distinctly dreamy, but after all, dreams, as you point out, 10 or 20 years ago, are realities today.

Mr. LAIRD. This could be done today, though.

Dr. TERRY. Yes, it could be done today.

Mr. LAIRD. You could set up continuous transmission of television programs on a worldwide basis. At least the Air Force feels that they have that capability; whether they do or not, we have to accept their word. I don't know enough about it to challenge their conclusions.

Mr. FOGARTY. Well, it is interesting. I think we ought to be putting more thought and planning into some of these proposals.

INVESTIGATIONS OF PUBLIC HEALTH SERVICE

Mr. FOGARTY. How many different committees, offices, and so forth, have made investigations or studies of the Public Health Service during the past year?

Dr. TERRY. Of the Public Health Service, broadly?

Mr. FOGARTY. Well, I am thinking about the Fountain Committee report. I am going to wait until Dr. Shannon gets here and ask him specific questions about the Fountain Committee report. Then you have executive Government agencies like the Secretary's Office; the General Accounting Office, and so forth.

Dr. TERRY. The General Accounting Office is always looking over our programs.

Mr. FOGARTY. That is a continuous program, as far as they are concerned?

Dr. TERRY. That is continuous. Of course, Mr. Humphrey's committee and others have had specific interest in the things we were just talking about: the dissemination of medical information—communication. In addition we have, of course, routine reviews by the Bureau of the Budget in terms of program development.

The Joint Committee on Atomic Energy also has interested itself in our radiological health activities.

Mr. FOGARTY. You have had some charges of wrongdoing in the Public Health Service that received quite a lot of publicity.

Has that been resolved?

Dr. TERRY. Yes, sir. That has been.

Mr. FOGARTY. It was a personnel problem?

Dr. TERRY. Yes, sir. That has been completely resolved.

Mr. FOGARTY. To the satisfaction of everybody?

Dr. TERRY. To my complete satisfaction and to the satisfaction of the Secretary. It was very carefully worked out. Mr. Ribicoff was our Secretary at that time. I am not sure how much Mr. Celebrezze knows about it because it was largely resolved by the time he came to his post. However, I think Mr. Celebrezze, who has been informed of this, can vouch for the fact that it was satisfactorily settled.

IMPLEMENTATION OF GROSS REPORT

Mr. FOGARTY. Now, what about the Gross report? Have you carried out most of the recommendations of the Gross report?

Dr. TERRY. We have begun many of the recommendations of the Gross report.

Mr. FOGARTY. We put that report in the record last year; did we not?

Dr. TERRY. A summary of it, and the estimated cost of carrying out the recommendations.

Mr. FOGARTY. The summary?

Dr. TERRY. Yes, sir.

By the way, before you leave the question of communications, here are some copies we have just gotten of our Health Communication Conference, which we held in November 1962. I would be happy to make available to the committee these copies, as an indication of some of the things that we are doing.

With regard to the Gross committee, I think that we have started on essentially all of the recommendations of that committee. Of course, one of the most significant items is the establishment of an Environmental Health Center to support this general program. This is one of the crucial items before us at this time.

Mr. FOGARTY. This was considered to be an outstanding committee; was it not?

Dr. TERRY. It certainly was.

Mr. FOGARTY. It was a unanimous report?

Dr. TERRY. Well, let me say it this way.

The report consisted of several parts. It consisted of a summary part which I believe was a unanimous report of the committee. Then it consisted of separate segments on water, air pollution, occupational health, radiological health, and so forth.

The committee as a whole did not adopt in their entirety those subcommittee reports. They merely took them as working documents for the final report but made them a part—for general information—of the total report.

Dr. Gross, as you know, is from Duke University and an outstanding chemist. He is this year president of the American Association for the Advancement of Science.

Mr. FOGARTY. I thought he was one of the outstanding men in the country. That is why we paid so much attention to this report last year. That is why we put the summary in the record, so everybody could read it.

We will put the statement you have prepared on this subject in the record.

(The statement referred to follows:)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, PUBLIC HEALTH SERVICE

ACTION TAKEN ON GROSS COMMITTEE RECOMMENDATIONS ON ENVIRONMENTAL HEALTH PROBLEMS

The Committee on Environmental Health Problems (Gross committee) was established by the Surgeon General in August 1961 to develop long-range objectives for the environmental health programs of the Public Health Service. The committee's report of November 1961 included 14 recommendations under 7 general headings, as follows:

1. Public Health Service responsibility in environmental health

(*a*) A major national effort, both governmental and nongovernmental, must be started if the environmental health problems resulting from the rapid growth of our highly technological civilization are to be adequately understood and if measures for their control and ultimate prevention are to be developed.

(*b*) It is essential that the Federal Government assume leadership in the research and development effort required to supply knowledge and techniques to the discrete State and local agencies of all types engaged in prevention and control activities for alleviation of threats to health from the environment.

(*c*) The focus of this national effort should be centered in the U.S. Public Health Service.

(*d*) The leadership of the Public Health Service in the prosecution of a national environmental health program should utilize to the fullest possible extent existing university, industrial, governmental, and other research and technological capabilities through grants and contracts for research, demonstrations, and educational and training facilities. Extramural extensions of the Federal activity should comprise a major fraction of the total annual effort.

2. Manpower needs

(*a*) In undertaking a national program in environmental health, high priority should be given to the early initiation of adequate training programs for a wide range of personnel in the physical, biological, and social sciences. These efforts should include the strengthening of the divisional training programs, the creation of a new program of institutional grants for comprehensive environmental health training, and the continued support of the Service's short-term, internal programs.

Funds in excess of $25 million are urgently needed to place these programs in full operation. Training effort of this magnitude will not create an imbalance with other scientific needs of the United States.

(*b*) Strong efforts are needed to improve the status and income levels of environmental health scientists to permit Federal, State, and local health agencies to recruit needed personnel.

3. Need for a National Environmental Health Center

To implement effectively the development of a focal point within the U.S. Public Health Service for an enhanced and major national effort in environmental health, the Committee recommends the establishment of a Center for Environmental Health, which should include the following elements:

(*a*) The headquarters activities of the present operational programs, including their administration, fundamental and applied research, and the national pool of resource personnel who supply information and assistance relating to control activities to the dispersed regional laboratories and instrumentalities operating wherever preventive and control measures are required.

(*b*) The administrative headquarters of a unified environmental health grants program in support of fellowships, university training programs, university-related research projects, and demonstration grants to properly constituted agencies.

(*c*) Appropriate facilities for the conduct of special training programs.

(*d*) A new "Office of Environmental Health Sciences," independent of the divisional structure and with separate budgetary provision, consisting of scientific groups reporting to the scientist who is Director of the Office of Environmental Health Sciences. These groups, which would include biological, physical, and social scientists as well as mathematicians, would study basic problems in environmental health, undertake research on problems of common interest to the several divisions where desirable, provide central services in mathematics, statistics, data processing, information storage and retrieval, instrumentation and analytical laboratory procedures, etc., and provide advice and consultation to the Bureau of Environmental Health with respect to the overall direction of research. Beyond these functions, these groups would be specifically charged with the continuing responsibility for an overall purview of the entire field of environmental health.

4. Location of the Environmental Health Center

The Committee recommends that the Environmental Health Center, including the Office of Environmental Health Sciences, be located in the Washington area.

5. Programs in environmental health

(*a*) The Bureau of State Services (Environmental Health) is presently organized into five working divisions, a structure which evolved as needs were recognized. It is recommended that, as soon as possible, each of the operating programs be strengthened materially with respect to staff and facilities, so as to accomplish their specific missions more effectively.

(*b*) In view of the growing environmental health hazards resulting from rapidly changing technology and increasing population the country over, the Committee recommends the continuing development of regional facilities, supplementary to the Center, with adequate staff and facilities to conduct applications research, training, and control activities appropriate to the regions involved.

(*c*) The Committee recommends that as the Public Health Service moves toward the broader and more comprehensive effort here proposed, every effort be made to conserve the real strengths of the present programs during the transition period and that intensive study be given to an optimal organization pattern for environmental health activities within the U.S. Public Health Service.

6. Relationship of programs of Bureau of Environmental Health to those of other Federal agencies

The broad scope of the problem of environmental health relates to virtually all of man's activities. It is to be expected, therefore, that the specific programs of the Bureau of State Services (Environmental Health) will frequently be contiguous with those of other agencies. It is imperative therefore that continuing effective liaison be maintained between the Bureau and other National, State, and local agencies so as to maximize the effectiveness of each while avoiding unnecessary duplication of effort.

7. *Need for legislation*

(*a*) The Committee recommends that the Public Health Service seek such legislation as may be required to establish a Bureau of Environmental Health with necessary authorization to conduct research, training, and technical support activities, and to administer a broad program of extramural training, research, demonstration, and institutional support grants and contracts. Such authorization should be in addition to existing legislation governing operation of the divisional programs. It should be designed to supplement, rather than limit, the existing authority for divisional operation.

(*b*) The Committee recommends that a statutory Advisory Council on Environmental Health be established to advise the Surgeon General on matters concerning policy, operations, research and training in the field of environmental health. This Council would also serve as an advisory group for the Environmental Health Center, including the Office of Environmental Health Sciences.

There follows a summary of actions taken by the Public Health Service on these recommendations.

The Public Health Service has proposed two actions which, if agreed to, would meet three of the recommendations and would serve as a basic foundation for orderly implementation of the other four recommendations. Legislation has been proposed to allow the creation of a Bureau of Environmental Health within the Public Health Service (H.R. 2410) and funds have been requested in the 1964 budget for site acquisition and planning for a National Center for Environmental Health in the Washington, D.C., metropolitan area. The approval of these two proposals will make possible a significant step forward in developing programs to meet each of the Committee's recommendations.

Pending the disposition of these proposals, the Public Health Service has, in addition, taken further steps to implement other specific recommendations. In moving to meet our responsibilities in environmental health, we have requested major additional support in 1964 for extramural activities designed to utilize the competencies of others. The 1964 budget includes an increase of over $8.7 million for grants to States, universities and other institutions, and individuals to expand research, training, and control efforts in environmetal health. The budget also includes an increase of over $5.3 million for expansion of our direct operations in these areas.

We are giving a high priority to the training and development of manpower to meet present and future requirements in environmental health. The 1964 budget includes an increase of $2.1 million in grants and $0.3 million in direct operations to be used for training activities.

We have also proposed in 1964 to initiate a program of environmental health sciences in direct response to one of the Committee's specific recommendations. The 1964 budget includes $4.2 million to fund such a program. This program will provide support for both extramural and intramural research. Included also are funds for grant support of research training programs.

In response to another of the specific recommendations, we have moved forward in the development of regional facilities to supplement the proposed National Center for Environmental Health in conducting activities appropriate to various regions of the Nation. Funds have been provided or are requested in 1964 for construction of five regional water pollution control laboratories, two water quality standards research laboratories, and two shellfish sanitation research centers.

Planning funds have been appropriated for an additional two regional water pollution control laboratories. The 1964 budget also includes funds to plan a new Arctic health research center which will form an important component of our regional facilities program.

We have continued also to strengthen working relationships with other National, State, and local agencies with responsibilities or interest in the field of environmental health. The Committee's report reflected an awareness of the close relationship of environmental health programs to those of such other agencies and recommended the maintenance of continued effective liaison to maximize effectiveness and avoid unnecessary duplication of effort. Interagency working groups have recently been helpful, for example, in the areas of natural resources, oceanography, and pesticides. We have also established a formal mechanism for coordination of our radiological health program with the Atomic Energy Commission.

TRANSFER OF RESEARCH AND TRAINING GRANT PROGRAMS TO BSS

Mr. **FOGARTY.** What progress has been made in the transfer of research grants, and research training grants, in the field of environmental health and community health, from the National Institutes of Health to the Bureau of State Services of the Public Health Service?

Dr. **TERRY.** With regard to grants, we have made quite significant progress. As you know, we have been working on this over a period of 2 years. At the present time, I believe that we have completed the transfer of all grant activities which are related to either community health programs or environmental health programs to the Bureau of State Services.

Now, with the training grant activities, we have not gone so far. I believe at the present time, there are only two segments of the training grants which have been transferred to the Bureau of State Services.

We have this under active consideration and expect in the very near future to have the remainder also transferred. So I think we are making satisfactory progress, sir.

Mr. **FOGARTY.** Who is handling this problem in your office?

Dr. **TERRY.** Dr. Hundley, and he is here, if you would like to ask him more specific questions.

Mr. **FOGARTY.** Where does Dr. Allen come into this?

Dr. **TERRY.** Dr. Allen? Well, he is a staff adviser; particularly with regard to policy in the grant field.

Mr. **FOGARTY.** Is there anything you want to say, Dr. Hundley, in addition to this?

Dr. **HUNDLEY.** I have more detail, Mr. Chairman, if you want it.

Dr. **TERRY.** I think it would be well to give it, if you like.

TIME SCHEDULE FOR COMPLETION OF TRANSFER

Mr. **FOGARTY.** What is the time schedule for the completion of the transfer of research grant and research training grant authority and funds in environmental health and community health from the Institutes of Health to the Bureau of State Services? Also, in the proposed budget for community health practice and research for 1964, you requested $2,792,000 for research, and $2,064,000 for research and development in medical care administration and public health administration. Do the terms, "Research" and "Research and Development" include the support of research training? In other words, do you propose in 1964 to support the training of research personnel in medical care administration and public health administration, with a portion of the funds you have requested in the "Research" and "Research Development" accounts?

Dr. **HUNDLEY.** Mr. Chairman, in a general way, the transfer of research grants and training grants in Environmental Health is largely consummated. In the community health area, we are still in process.

The budget before you will show in the community health budget, funds and supporting language to permit the transfer of research grants to BSS, those which are related to community health activities. In the training grant area, we are still somewhat in midstream, as Dr. Terry indicated. The only transfers that the 1964 budget would permit are in dentistry and nursing.

We had, Mr. Chairman, a legal problem in part, in that we did not have, when this budget was prepared, legal authority for BSS in some of the training areas. This problem was resolved last year by the passage of the act authorizing the two new Institutes. There now is a legal basis for the Bureau of State Services to support training grants.

However, I should point out, Mr. Chairman, that the 1964 budget language was prepared before this new authority was available. Therefore the budget language does not specifically mention research training grants.

If the committee would agree, we would hope that some small portion of the funds shown in the budget for the Bureau of State Services in the community health area could be used for research training grants.

This is of some importance to us because we are in a hiatus period, when NIH cannot support certain activities because they belong to BSS but BSS is just acquiring the funds and the authority. We are fearful that some training activities that should be supported will not be supported.

Otherwise we see no major problems that cannot be resolved through activities now underway. The major area that remains is to get training grants and authority straightened out.

POSSIBILITY OF TRANSFERRING RESEARCH FACILITIES PROGRAM

Mr. Fogarty. I heard from Providence College and both universities in Rhode Island indicating that they were fearful that there would be a transfer of the administration of the research facilities program from the Institutes of Health, consolidating it with the Hill-Burton activity. All three have written to me and they think the program has worked out real well where it is and it might be a mistake to transfer it.

Dr. Terry. There is no plan to make such a transfer. I might give you just a little background, if I may, Mr. Chairman, on this.

We have several construction programs in the Public Health Service. Passage of H.R. 12, the proposal for assistance in construction of health educational facilities would add another major program. We have the research facilities program at the National Institutes of Health. We have the Hill-Burton program, which is located in our Bureau of State Services. There would be then three types of programs which could conceivably be involved in the construction of one building for a new medical school, some of it for teaching facilities, some for research, and some for Hill-Burton hospital care facilities.

With this in mind we began last year to study very carefully the question of how we can operate and coordinate these activities. You are probably aware that from our Hill-Burton program we already provide a considerable amount of professional advice and consultation to the research facilities program, particularly in architectural and engineering aspects.

We have a group working on this in terms of how we can best coordinate these activities.

Some deans of medical schools have been considerably concerned about this. They are fearful that if they develop a proposal for a building involving teaching, research, and medical care facilities, that they would have to deal with three uncoordinated areas in the Public Health Service. I can assure you that this will not be true. We have no plans to transfer any of the research facilities program to the Hill-Burton program. I can assure you that there is going to be a close coordination between these programs.

MEDIPHONE SYSTEM

Mr. Fogarty. Whatever happened to the so-called mediphone idea?

Dr. Terry. We had no direct connection with it, Mr. Chairman. It was a private enterprise. It apparently progressed to a stage where it appeared ready to go into operation, and then I believe because of financial difficulties it folded.

Mr. Fogarty. It was in operation in the District of Columbia for the first 4 months of 1962.

Dr. Terry. It was at least in partial operation for a while.

Mr. Fogarty. Yes. They had financial problems.

Dr. Terry. Yes.

Mr. Lesinski. Mr. Chairman, if I may ask, What is this all about?

Dr. Terry. Mediphone is a system that was to provide a central depository for all information with regard to drugs, particularly drug action, drug toxicity, side effects, and so forth.

The idea was that physicians would subscribe to this service. By dialing a number, they could ask a question and then very quickly the central office could retrieve the information on this particular drug; what the proper dosage is, what its effects are, and any side effects or toxicity that might be encountered.

I think one of the principal problems was that they did not get enough subscriptions from physicians.

Mr. Lesinski. Thank you.

Mr. Fogarty. A law firm wrote me this letter.

> In talking about the mediphone, it was in operation here in the District for about 4 months * * * The story of human lives actually saved by it during the brief period has been utterly amazing to me and to others who have considered it.

Have many lives been saved?

Dr. Terry. Really, I don't know, Mr. Chairman.

Dr. Hundley. Mr. Chairman, I don't think it was in operation long enough on a sufficient scale to have documented evidence on this point.

MENTAL HEALTH AND RETARDATION

Mr. Fogarty. What activities do you plan as a direct result of the President's message on Mental Health and Retardation?

Dr. Terry. As you know, Mr. Chairman, bills have been introduced in the Congress which would implement the President's program. Of necessity, we will have to wait, for certain aspects of the program, for the enactment of legislation and for the appropriation of additional funds for this purpose.

On the other hand, I think you are well aware that over the past several years we have put a great deal of our research effort, both in terms of intramural research and extramural research, and training into this area. The National Institute of Mental Health, and the National Institute of Neurological Diseases and Blindness have been heavily involved in this program. We have a great deal going at the present time.

I think the principal differentiation that might be made at this moment, is that the President's program envisions matching grants to be used in assisting communities in the construction and initial staffing of facilities to permit switching over to a more active and comprehensive program, often associated with the community hospital, in the field of mental health and mental illness. He also has proposed a program of Federal grants to build new research centers as well as comprehensive facilities for care of the mentally retarded. Many of those things will have to await legislation and appropriation. However, in addition to the things I mentioned earlier, I think our perinatal study, of which I think you are well aware, is a very important contribution in this direction.

The program development which will take place in our new National Institute of Child Health and Human Development is just getting activated. I am sure this new Institute will make significant contributions in the direction we are speaking of, especially in mental retardation.

So that I think that we have quite a lot going. We could very easily put in the record, for instance, information showing how many dollars the Public Health Service put into this area during the last year, and would be glad to submit it, if you like.

Mr. Fogarty. All right. We will put it in the record.

(The information referred to follows:)

Obligations incurred by the Public Health Service in 1962 in the area of mental health and mental retardation activities totaled $131,131,000.

ORGANIZATIONAL LOCATION OF ADDITIONAL MENTAL HEALTH ACTIVITIES

Mr. Fogarty. Will practically all the increase for mental health be in the Mental Health Institute, or will much of the work with the State and local groups be done by the Bureau of State Services?

Dr. Terry. There will be definite increases in the program of the National Institute of Mental Health. We expect, in terms of the concept of the national program for mental health, to keep primary responsibility for research and training activities and for community mental health activities, in the National Institute of Mental Health. The proposed program for construction of mental health and mental retardation facilities would go to our Division of Hospital and Medical Facilities which is in the Bureau of State Services.

PROPOSED DISTRICT OF COLUMBIA PROJECT

Mr. Fogarty. On February 16, there was a piece in the paper about a $500,000 project to be launched in the District of Columbia in Mental Health.

Dr. Terry. Another thing that I could add here is that, in speaking of the mental health and mental retardation activities, I have confined my remarks entirely to the Public Health Service. But this by no means covers all of the anticipated departmental activities. The

Children's Bureau, the Office of Vocational Rehabilitation, and the Office of Education, all have an interest in developing programs related to mental retardation.

HEALTH RANKING OF UNITED STATES

Mr. FOGARTY. We see statements in the press that this country ranks fifth or sixth among the nations of the world, as far as the health of the country is concerned.

Is that about right?

Dr. TERRY. I don't know how one could accurately evaluate exact positions among the say, top ten nations.

Mr. FOGARTY. The infant mortality was one factor. The life span was another.

INFANT MORTALITY

Dr. TERRY. Yes. You can do it. You can take particular segments like that, Mr. Chairman. We have presented and discussed with this committee before, our standing in relation to child health, infant mortality. The United States has been well down the list.

Mr. FOGARTY. It has not improved much.

Dr. TERRY. It has not improved much over recent years, sir.

Mr. FOGARTY. Why?

Dr. TERRY. It is a very complicated problem, that I don't know whether I can answer completely. One of the problems is that we have large segments of our population who are not getting adequate medical care; those who are in remote areas, remote from medical care; those who are in a lower educational level, in terms of appreciation of the need for preventive measures.

One of the things I pointed out in my opening statement was the appalling fact that among children, younger children in this country, who should have received the preventive vaccines for the four diseases I mentioned, only roughly a third have received complete vaccination protection.

All of this adds to the picture. One can get specific evaluations in specific areas, such as infant mortality. But when one speaks in terms of the overall health of the country as compared with other countries, I don't believe we have adequate criteria to say that this country is No. 1; this country is No. 2.

Mr. FOGARTY. How do you measure the health of the Nation?

Dr. TERRY. Well, that is just what I am saying. I don't think we have adequate overall measures. We have a lot of facets that we can measure. But I am not sure that when we put all of these together that we get a satisfactory answer to the total question.

Of course, there is longevity, the age expectancy of the population; infant mortality; incidence of infectious, contagious diseases; mortality rates. All of these things enter into it.

Mr. FOGARTY. Have you ever given any thought to having a study made of the manpower resources in the chronic disease area?

TRAINING IN TREATMENT OF STROKES

I am thinking about one particular problem—strokes. I had a conversation with some doctors recently who told me that the curriculum in medical schools today is such that they may spend 18 hours on strokes and maybe 22 hours on typhoid fever.

Dr. TERRY. A physician who practices today may never see a case of typhoid fever.

Mr. FOGARTY. Yes; but this is what I was told in a conversation last night. Many of them are graduating today—and the American Medical Association recognizes this also, I think—and don't know what to do about a stroke.

Dr. TERRY. This is certainly a very important area. Of course, it is an area in which we had been working for several years. We have joint activities, for instance, in the field of research to get the basic information; joint activities between the National Heart Institute and the National Institute of Neurological Diseases and Blindness because each of these institutes has a very clear interest in this matter.

One of the things that is in motion at the present time is a cooperative study in several of our important medical institutions to study the relationship of atherosclerosis—hardening of the arteries—and obstruction of the arteries outside of the brain—to arteries inside the brain which may be reached by not too complicated surgery. It has been clearly shown that in some patients who are showing these light strokes, from which they generally recover, the general experience is that finally, if something is not done, they will get permanent damage.

Now, on the other hand, by visualization of these arteries, and surgically removing the obstructions, where they are demonstrated, a great many of these things have clearly been prevented.

Mr. FOGARTY. It is a sad thing to hear that many of our young doctors have not been educated to know about some of these improvements.

Dr. TERRY. Yes, sir.

Mr. FOGARTY. This doctor told me last night there was a meeting held just recently, of rehabilitation people and heart people and the American Medical Association. I don't know whether it was here in Washington, or where it was.

Dr. TERRY. I am not sure which meeting this was. Certainly there is, in addition to the basic research type of things that are going on, and through the Community Services and Facilities Act——

Mr. FOGARTY. Would there be any possibility of another study, similar to the one made by the National Institute of Health in the field of medical research, looking into these manpower resources?

Dr. TERRY. We have continual studies going on, in the area of manpower resources.

Mr. FOGARTY. Another point, this particular doctor made, who was interested in rehabilitation, was the deplorable lack of knowledge among doctors in problems of rehabilitation on simple things like fractures. Sometimes when they are taken care of by a general practitioner, and later they go into a rehabilitation center, they have to start all over again.

Dr. TERRY. We have had an interesting study going on in the State of Georgia, for—it must be 3 or 4 years now—concerning rehabilitation of stroke patients. This is particularly directed toward teaching practical nurses and members of the family to carry out exercises and other rehabilitative techniques.

This project has been jointly supported by the Public Health Service, the Georgia State Health Department and the Georgia Heart Association. It is a demonstration project in the true sense, because it has been able to demonstrate the rehabilitation of many patients, that we had not thought possible under the particular circumstances. It has been directed largely toward teaching people to carry out rehabilitative exercise techniques and then evaluating what results have been obtained. But I would like for Dr. Hundley, if he may, Mr. Chairman, to say something about the manpower.

Mr. FOGARTY. Go ahead, Dr. Hundley.

Dr. HUNDLEY. I would like to make two or three points with respect to strokes. We certainly recognize deficiencies in the knowledge and training of general practitioners. We have an active program of both professional and public education on this subject. I think our publication, "Strike Back at Stroke" has been one of our more successful efforts.

Mr. FOGARTY. I read that. I thought that was excellent.

Dr. HUNDLEY. So far as manpower is concerned, we have also been quite active through various studies. Neurologists, for example, are important in this type of problem. We have made a comprehensive study of the supply of neurologists for teaching, for service, for research, and community programs. You may recall that Congress, for the first time last year, provided funds to train more of these people, and to enrich their education. Funds were also made available to train the paramedical personnel needed.

NEED FOR IMPROVEMENT OF MEDICAL TRAINING

Mr. FOGARTY. Is it a fair statement that the curriculum in medical schools today is not giving enough attention to this problem?

That charge is made by the dean of a well-known medical school. The comparison between the number of hours on strokes and the number of hours on typhoid fever is an example he gave.

Dr. HUNDLEY. I think, Mr. Chairman, it is fair to say the medical curriculum is in a constant state of evolution. It is constantly trying to catch up with the advances of medical knowledge and new methods. However, it takes time to change medical curriculum.

Also there is a continuing problem with the medical curriculum. How much can you jam into it? This is a real problem that medical educators face. We would like to have more of many things. Getting everything in is the challenge. I think this is well recognized by educators, as evidenced by the fact that a dean made this comment to you.

Mr. FOGARTY. Do you want to say anything, Dr. Shannon?

Dr. SHANNON. I would be glad to.

I believe the undergraduate medical curriculum can never satisfy special needs, that is, adequate information to satisfy the needs of all special disease entities, nor will it be possible to provide within the undergraduate experience the wherewithal whereby physicians can keep current with the continuing advancement of knowledge throughout their professional careers.

Now, two types of activity would provide for this quite effectively but neither of these activities are adequately carried forward in this country.

The first activity I have reference to is residency training. Such training is partially supported—and I might say inadequately supported—as part of the medical service activity of hospitals, and partly supported as an educational activity of a graduate nature within the general framework of the medical school.

Residency training is generally obtained in the period of 2 to 5 years after internship and at a time when the career is fairly definite. Such physicians obtain special training and work experience in a selected area of medicine they have elected to emphasize throughout the rest of their career.

This is not adequately financed. Too often, it is financed on a marginal basis, but in many institutions, particularly as developed in university centers, the experience is superb. However, too often the staffing of the hospital is not adequate to take care of the educational opportunity they have at this very critical stage of the developing physicians.

It is only in recent years people have begun to face up to an essential segment of education, the economics of which warrant a thorough overhauling.

As far as the Public Health Service is concerned, it has no authority to operate in this area at the present time, although it does support some residency training incidental to training clinical scientists. Repeatedly, though, we have commented on the broad educational deficiency in this area.

We are equally impotent in the area of continuation of education.

In medicine today where, through research, information is accumulating very rapidly, a medical graduate at age 25 will not have accumulated the information he will require for practice during the next 40 years. Yet there are no formal or informal mechanisms that will provide for an opportunity of assured and continued growth.

I believe that there must be developed some thorough system whereby a physician can be exposed to such additional training as will make it easy for him to obtain the special new information he requires to remain current as he ages with his profession.

I think that most of the deficiencies of medical practice are as the result of deficiencies in these two critical areas of education. The effectiveness of practicing physicians will depend to a much greater extent on these than on what happens during the undergraduate experience for the short period of 4 years. The undergraduate experience must prepare him to receive and digest new information but it cannot transmit to him information not then available.

We are too prone to look at the medical curriculum and say things are wrong here or there and manipulate subject material around in a 4-year period and forget, basically, the physician is going to practice in his profession for 40 years.

This too is increasingly appreciated by various groups across the country but there is at present no focus within Government that will address itself peculiarly to these issues.

ROLE OF BUREAU OF COMMUNITY HEALTH

Now, I really feel that the development of the new Bureau of Community Health may provide such a focus. This new bureau will be considering the mechanics of delivery of medical service and will also be considering the quality of the services rendered, their cost and their payment. One must assume that they will also become involved in broad problems noted a moment ago. They must become involved in the residency training, and they must become involved in the problems of continuation education.

I would hazard a guess that within the next 2 or 3 years of the establishment of this new Bureau they will be very heavily involved in studying the manners in which the gross educational deficiencies as they exist today can be remedied.

Mr. Fogarty. Would it be feasible to have another report?

Dr. Shannon. There have been reports on this in recent years, sir, and we might bring them together for you in summary form.

Mr. Fogarty. They are probably way out of date by now, are they not?

Dr. Shannon. We emphasize these viewpoints in the reports on manpower and on scientific communication we made last spring. This is not a new thought on my part or new thought in Public Health Service. These deficiencies in the ability to communicate new knowledge to practicing physicians we have been well aware of for some time. But we do not have the mechanism, really, to mount a program adequate to fit the need.

My conviction is that the satisfaction of these needs will do more to translate new knowledge to the point where it can be used—namely the physician—than anything else that can be done.

Mr. Fogarty. You said in your report a year ago that you projected an expenditure of about $3 billion in medical research by 1970. Are we keeping up with that projection?

Dr. Shannon. I think if we take all the medical health sciences, that it is still a reasonable figure.

Mr. Fogarty. How does this budget compare with that $3 billion figure in 1970? Is it up to date, or is it low, or is it high?

Dr. Shannon. I would be glad to bring those projections with me when I testify.

Mr. Fogarty. All right.

If it is feasible, I think when you come before the committee we ought to talk more about the studies in these areas.

Dr. Hundley. We are preparing a paper for a different purpose dealing with health manpower resources. We will be glad to provide it to the committee as soon as it is available.

Secondly, within the last week we have discussed with the Bureau of States Services the desirability of drawing together the many separate studies that we have done on physicians, dentists, nurses, dietitians, public health personnel, and so forth, to enable us to get a better overall picture of the manpower needs in the service area. We are planning to do this.

Mr. FOGARTY. Mr. Lesinski.

HIRING PROCEDURES

Mr. LESINSKI. First of all, you talk about your hiring. Do you follow the Civil Service Commission regulations?

Dr. TERRY. Beg your pardon?

Mr. LESINSKI. In hiring do you follow the procedures of the Civil Service Commission?

Dr. TERRY. We have two personnel systems in the Public Health Service. The civil service system consists of the larger part of our employees. On the other hand, we have a commissioned corps which consists of professional persons, doctors, dentists, nurses, scientists, veterinarians, and so forth, which is a separate system.

Mr. LESINSKI. Schedule C?

Mr. KELLY. It is more comparable with the military officer system.

Mr. LESINSKI. Now is this general in HEW?

Mr. KELLY. Only Public Health.

Dr. TERRY. Only Public Health Service.

Mr. LESINSKI. Oh——

Dr. TERRY. It dates back to the late 1800's.

HISTORY OF NATIONAL INSTITUTES OF HEALTH

Mr. LESINSKI. Would you tell me, Why was the Institutes of Health originally founded?

Dr. TERRY. Why was it founded?

Mr. LESINSKI. Originally; yes.

Dr. TERRY. The very beginning of the National Institutes of Health was some 75 years ago this past year, which began with some investigative work in the field of infectious diseases. I have forgotten at the moment just what it was.

Dr. HUNDLEY. Cholera.

Dr. TERRY. Cholera. As time went by the Hygienic Laboratory developed from this. It was located here in Washington, near the west end of Constitution Avenue.

During this period the vast majority of effort in this Laboratory was devoted toward infectious diseases. It was only in the late 1800's that we began to isolate and identify the causes of infectious diseases and then, as a result of that, vaccines began to be developed as well as other preventive measures.

In 1937 the Wilson family donated to the Public Health Service a plot of land in Bethesda, which is the current site of the National Institutes of Health, and the Laboratory was moved from Washington to Bethesda.

At the same time there was growing recognition that as the infectious diseases were coming better under control, there were many other problems, particularly in relation to chronic diseases, metabolic, and other types of noninfectious diseases. So, as time passed, interest grew in particular fields such as cancer and heart. Separate institutes were established by acts of Congress to emphasize the importance and to focus attention on research in such fields.

This has been the basic nature of the growth of the National Institutes of Health.

Mr. Lesinski. Well, do not the National Institutes of Health also coordinate the various operations—or who does that?

Dr. Terry. We have laboratories at NIH and some few field studies associated with NIH which we do ourselves. This we refer to as our intramural research. The vast majority, about 80 percent of the funds which go to the National Institutes of Health, are given to us for allocation to support medical research throughout the country, in universities, colleges, medical schools, dental schools, and other places. So that we have a large grant, extramural grant system. The Congress allots money to us that is reallocated to support research and research training all over the country plus a small amount which is allocated in other countries.

Then we have our own research activities both in Bethesda and at a few small field installations.

Duplication of Research Activities

Mr. Lesinski. At that point the thing that bothers me is, everyone who has testified here before us up to now has testified that the purpose and intent—I am not disagreeing with it at all—I am in full accord—but the vastness of a large number of repetitive, similar operations being the fact, that you might have 50 or 100 colleges, universities, working on the same subject; now to me this does not make sense.

I can recognize some duplication is necessary; I believe it is good. But you seem to have mass duplication in your operation.

Dr. Terry. I don't think we do, sir. Our study sections and our councils——

CANCER RESEARCH GRANTS AND CENTERS

Mr. Lesinski. Let's put it this way: How many centers have you got for research on cancer?

Dr. Terry. I don't know. Do you, Dr. Shannon?

Dr. Shannon. I cannot give you the specific figure, sir, but it would be somewhere in the order of magnitude of perhaps as many as 2,000 individual grants.

Mr. Lesinski. Research centers?

Dr. Shannon. Oh, did you say "research centers"? There are only 12 or 13 centers that can really be called cancer research centers. I have in mind activities such as the Memorial Hospital in New York, the Anderson Clinic in Texas, McArdle Cancer Institute in Wisconsin, and the like.

In general cancer research is not limited to a few centers that elect cancer as an area of special concern to them. Rather, cancer research encompasses many individuals in many areas of activity. It consists of studies in biochemistry, genetics, virology, physiology, pharmacology, pathology, cytology, and studies in a number of fundamental sciences that have direct relevance to those factors that affect the growth of cells and the differentiation. The results of such studies have direct relevance to the understanding of cancer, even though the individual studies themselves would not be considered to be a cancer research activity.

So in each of the categorical programs there are studies that are directly applied to the category of diseases of interest to an institute and there are studies which provide for a fundamental understanding of the problems. For example, leukemia is cancer of the blood, but in its study one would support blood formation and its disturbances in a wide variety of conditions.

Each categorical program breaks down about 50–50 into projects that are directly definable as being wholly with the categorical of intent of the appropriation and those which are more generally of scientific disciplines and fields upon which the more definitive study depends.

Mr. Lesinski. I understand you said there were 12 centers?

Dr. Shannon. This is my recollection.

Mr. Lesinski. Be it 12 or 13 or 11——

Dr. Shannon. That order of magnitude.

Mr. Lesinski. I can understand the 12 research centers, the hospitals that are doing this research and development and so forth. I read enough about cancer to know there are various types of cancer, therefore you have to attack it from different angles and by learning or developing one method of attacking cancer that it might aid other types of cancer research.

Invariably in these things there is a chain reaction because, when you are able to find out how to operate you can pretty well duplicate for the other. But how many grants have you got out for cancer research?

Dr. Shannon. This is the figure I gave you. I cannot give you the precise figure but it would be somewhere around 2,000 grants.

Mr. Lesinski. Separate grants?

Dr. Shannon. Separate grants; yes, sir.

VARIOUS ASPECTS OF CANCER RESEARCH

Mr. Lesinski. That is what I was getting at. Why so many?

Dr. Shannon. Why not, sir? I do not see the pertinence of the question. These are all scientists who have a capability of making some contributions to fields that have been shown to have direct relevance or are believed to have direct relevance to some aspects of the cancer problem. Medical research is characteristically performed by many people working in quite small groups contributing to the overall solution of a problem. This is quite different than some areas in the physical sciences where, because of high cost large scale equipment the number of groups is considerably smaller but the bulk of scientists will be contained in groups which are themselves large. I have in mind research in nuclear physics.

Our average grants supportive of an individual amount to about $17,000 or $18,000. This would be in support of an individual scientist to study one aspect of a problem that has relevance to the cancer problem.

PRACTICALITY OF CRASH PROGRAMS

Mr. Lesinski. In other words, you are attacking it from a mass injection of human beings into a subject or the field without getting into it in a practical sense of developing from your centers, 12 centers, criteria, and so forth, developing a checking of cancer and then check it backward.

What you are doing is throwing a lot of people into—like building a battleship. You think you can build a battleship quicker with a million men than with a trained crew. It cannot be done. Everyone is stepping on everyone's toes.

Dr. SHANNON. Beg your pardon. We are doing both types of research. Where it is possible to pull out a special area for target type of research, this we do. We can point to some large grants involving a small number of installations. Cancer chemotherapy, for example. This program will run to an annual expenditure of about $35 million. The bulk of this research is in industrial programs, highly regulated through contract.

Another comparable program relates to the attempt to define the role of viruses in cancer causation. But, sir, medical science is not at a stage where you can do as you indicate, design and build a battleship. Unfortunately, we are not that far along in our basic knowledge.

Mr. LESINSKI. The only parallel I made there is it might take a crew of 500 to 1,000 at the shipbuilding yards to construct a battleship, but if you threw in one million it cannot be done because they would be in one another's way.

Dr. HUNDLEY. I think a direct answer to your question is that there have been proposals in the Congress and elsewhere for a Manhattan project kind of program against cancer, pour in a billion dollars——

Mr. LESINSKI. That is what——

Dr. HUNDLEY. We have consistently opposed such proposals.

Mr. FOGARTY. Something like polio vaccine.

Mr. LESINSKI. I am glad to hear this. It seems to me everything is a crash program and it is a waste of money.

Dr. TERRY. I don't think that is true.

Mr. FOGARTY. I do not think it has developed in these hearings there is a crash program. I wish we did have one.

Dr. TERRY. These programs have been gradually built up over a period of years, carefully selecting people who have the talent and ability to do research and who want to do a particular type of research. And certainly it is not a crash program.

Now, your comparison with polio, one may get into crash programs when you have the information to make a practical application of a vaccine or something of that nature. But in general, most of medical research just doesn't lend itself to any crash program approach.

Mr. LESINSKI. I realize that. I mean I am not opposed to the attempt. But if you have 500 separate grants working, of course there is probably some coordination but it just seems there are too many at the same time.

Dr. TERRY. I do not think there are too——

Mr. LESINSKI. Frankly, I think it would be better, if you had 500 men working in research laboratories, to have close supervision, close coordination of effort, than have it scattered all over.

Dr. TERRY. I think there is more coordination and less duplication than you feel.

Mr. LESINSKI. I am glad you said that because I am coming to something a little different.

In your statement there are sections here concerning shortages of trained personnel in certain fields and then I know there are others. Shortage of personnel for mental health problems and so forth. Then you state there is coordination between your various developments, research centers, and the agencies.

PROPOSED ENVIRONMENTAL HEALTH CENTER

Then you go on to say you need an Environmental Health Center. Now you are going to duplicate what AEC does, what the Agriculture Department does, what the Taft Center does and at one time you are crying you do not have enough personnel and now you come back, you want to set up a new department and have 5,000 or 6,000 people within a short time, a billion dollars at the expense of the Federal Government, and which will take some private research and other governmental projects, take the personnel most needed today and you hurt other programs.

Now, by getting into environmental health you are going to have another billion-dollar program going on, will you not, eventually?

Dr. TERRY. I don't know. It may be, eventually.

If our problems in the field of environmental health continue to multiply as they have it is conceivable, certainly. We do not have any projections of this magnitude.

Mr. LESINSKI. Mr. Kelly indicated you are to have 5,000 employees in Environmental Health.

Mr. KELLY. 1,614 is what this initial design is for and it will be designed with a capability for expansion.

Mr. LESINSKI. And after that, how many more will you have?

Mr. KELLY. Well, we asked the scientists and program people to think in terms of what they really envision so we could select a site and we could design a plant susceptible of growth. And I think that they were thinking in terms that the outside growth that they could now visualize was something somewhere in the neighborhood of 4,500–5,000, if I recall the figure.

However, the amount of money involved would be larger than the cost of supporting this size staff because they are also engaged in the support of extramural research, support of manpower and assistance to communities to combat the problem of environmental health.

POSSIBILITY OF NIH HANDLING ENVIRONMENTAL PROGRAMS

Mr. LESINSKI. Couldn't the National Institutes of Health handle this instead of having another separate agency? I can understand the need of coordination. I am not fighting the need of getting information together and working it out, which I understand perfectly. The only thing I am driving at is why set up a new agency?

Dr. TERRY. I think that our proposal for an Environmental Health Center and the other aspects of the environmental health program should be recognized to be somewhat separate, but integrated.

In the first place, we have water quality and water pollution control; we have radiological health; we have air pollution control; occupational health, and then our sanitary engineering responsibilities which are related to food, water, seafood, and so forth.

Mr. Lesinski. It isn't that the Institutes of Health—can't they take care of all of those, and coordinate them?

Dr. Terry. It is conceivable, if you had the land and wanted to build as a separate part of the National Institutes of Health. But it is perfectly obvious they can't do the job with the facilities and people they now have.

Mr. Lesinski. In other words, the complaint before was we had to, in order to develop a certain program, we had to have a little spinoff with this or that. Now that we have got these programs underway we have to get them all back together.

In other words, the point I am driving at is simply this: You had the National Institute of Health. Then you had your spinoff of the tubercular research, spinoff of air pollution, and so forth. Of course it is a separate program; I understand that. But now you want to bring all these dislocated feelers back into the body.

Dr. Terry. These are programs which, because of the development of this Nation, have really grown up in recent years—concentration of our people in cities, the pollution of our streams, the number of chemical substances that are getting into our water, into our air, our occupational health problems, the problems of radiology and radiological health.

These things all have a certain amount of basic similarity inasmuch as they require basic studies in toxicology, study of toxicity in people, what they do to man and what concentrations, under what circumstances.

You get radiological contamination of water, but there may be a mixture of bacterial viruses and of radiological contaminants and chemical contaminants. Much of the basic studies in this field needs to be very closely interrelated and integrated. That is the reason we need an Environmental Health Center, to help pull this together.

The only other point that I made was this, in dealing with this whole area of environmental health factors, we have now a large number of field installations which are in existence today, some for research and some for service needs. These are scattered all over the country and there are going to be more with the authorizations which the Congress has already given us.

It is very important to have a central point where we can coordinate the activities of the Taft Center, of the Water Pollution Laboratory in Fairbanks, Alaska, and the one in the Northeast, and the Seafoods Laboratory on the west coast, as well as the gulf coast, and so forth.

In other words, we need a central focal point, Mr. Lesinski, which not only has administrative responsibility and talents, but we need the technical professional people there intermingling in this focal point to tie it all together, and to keep from doing a lot of the duplication and needless sort of things that you are objecting to.

Mr. Lesinski. That is exactly the point, I have been told this time and time again and I have been trying to pinpoint this duplication and so forth—of course I have no proof of it except what I see going on here. But I tried to portray to you the octopus, in other words, your agencies will do this: They will set up separate subagencies and so forth. Now you are trying to get the subagencies back into the big agency.

No. 2, I think your idea has merit, basically. I am not arguing with your intent. It is very rational, very understandable.

TRAINED MANPOWER IN ENVIRONMENTAL HEALTH

But I think it is premature to the extent that you will be taking, from these various fields, men for this one agency, key personnel; there is a shortage, as you so state, of key personnel.

Dr. TERRY. When I talk about the various aspects of the environmental health program, one of the very important things in the establishment of these laboratories, particularly those connected with the universities, is the training of technical manpower. We are going to do a great deal in that direction because the needs of the Public Health Service in environmental health are not going to represent the national needs; they only represent one segment of it. Los Angeles, for example, is going to have to find people in the field of environmental health.

Mr. LESINSKI. As are all of our other cities and States.

SOURCE OF MANPOWER FOR NEW CENTER

Mr. KELLY. I think I might have misled you, Mr. Lesinski, on the 1,614. These are not 1,614 new employees. We have a very substantial number of these employees now, improperly housed. The Public Health Service, I think right here in Washington, is spread in 27 buildings. We have employees that do not have adequate laboratory space. We are trying to develop a housing operation where they will have adequate laboratories and adequate space and where they will be able to perform their function in a way in which they can coordinate their work and the scientists engaged in these various environmental fields can talk to each other and coordinate their task. But this is not a wholly new organization and a wholly new staff.

Mr. LESINSKI. Are you going to draw in the other staffs to form a central staff?

Mr. KELLY. We have already been organizing and pulling together all of the environmental staff of the Public Health Service. But we do not have a physical plant in which they can conduct their work.

Mr. LESINSKI. Well there was, you did say, last year 4,500 to 5,000 new people. In other words, this will be so much less, roughly this much less from your other subagencies?

Dr. TERRY. Many of the people who are already working in this area will be pulled in from our existing laboratories which are scattered around. We have laboratories in rented space in Rockville, two separate laboratory spaces, concerned with radiological health. We have other rented space and improvised space where people are working.

This would not be the creation of anything new; it would simply be the organization and coordination of existing functions into a central focal point where it could make more sense to you and to me as taxpayers as good, planned use of money.

POSSIBLE USE OF ELECTRONIC EQUIPMENT

Mr. **Lesinski.** Couldn't this be done under your jurisdiction with a minimum of staff by getting electronic computors, putting it on tape and then you can break it down very quickly and coordinate it, like the Bureau of the Census operates?

Dr. **Terry.** I don't think there is any question we will be using that to some extent in terms of coordinating the work that is going on at Ann Arbor, Mich., or Ada, Okla., or Fairbanks, Alaska.

Mr. **Lesinski.** In other words, for a few million dollars you can buy the necessary equipment to do this work?

Dr. **Terry.** We are not ready for that at the present time.

Mr. **Lesinski.** That is why I say your basic intent is good but you are too premature in bringing this out.

Dr. **Terry.** We have been planning this, Mr. Lesinski, for 3 years and there is not a single professional, technical, scientific group that has reviewed the question that has said this is not necessary in the national interest.

Mr. **Lesinski.** I am not arguing that question, the point being we need 1,000 new bombers, we need a couple hundred Polaris-type submarines with atomic power, we need a lot of things. But there are limitations upon us which have to guide us accordingly.

Now, the point I am driving at is you anticipate setting up a new agency that will cost roughly a billion dollars a year. You can do the same work, same research in a smaller office with the proper equipment by simply having the people around the country sending you the information.

Dr. **Terry.** I say again, sir, that we are not setting up anything new. We are merely pulling together programs which are already in existence in the Public Health Service, in this country in general, scattered over the country, pulling these programs together so that they can work together, so that we can take advantage of their proximity. Furthermore, the very important part of it is the question of the laboratory support which we must have in this field.

Just look at this map a moment and look at it in terms of the existing laboratories and field installations that we have in environmental health programs at the present time.

Unless we have a central focal point with good technical, professional, administrative competence, I cannot run a good program.

Mr. **Lesinski.** I am not arguing with you, but by your very statement, you are admitting you have grown too fast without proper——

Dr. **Terry.** I am not admitting any such thing.

CONSTRUCTION OF MIDWEST WATER POLLUTION CONTROL LABORATORY

Mr. **Lesinski.** Well, let's go to another item. Mr. Chairman, recently there was a site in Ann Arbor selected for the Midwest Water Pollution Laboratory and I believe some $250,000 is available for planning. Authorization for funds to construct the building is not in this budget.

The concern here is the fact of the great need again on water pollution. I understand—this is why I have to concur with your anxiety of getting research developments and knowledge together on these various programs; this is the reason I am bringing this subject up.

I have two letters here, and both are asking that, if possible, the committee would allow $3 million in the President's budget for construction of the new building. Now, their reasoning is simply this: We know that the planning will take from 6 to 9 months, but if the authorization for building the unit is in, they can start with the summer of 1964 with the new buildings; and also the fact that it takes a while to get the proper personnel. If this authorization is in now, they can start recruiting.

The University of Michigan——

Mr. KELLY. We do have, Mr. Lesinski, funds that have already been made available to us, the funds for architectural planning of this laboratory.

Mr. LESINSKI. Yes.

Mr. KELLY. And it is our view that we will not cause a delay of more than 3 months by not asking for the construction funds until fiscal year 1965.

In other words, if we had the construction funds in the fiscal year 1964 budget, our schedule, our work schedule as to how soon we would be ready for construction would indicate that we would not gain more than 3 months, and the likelihood is we would not gain anything.

Mr. LESINSKI. Mr. Kelly, I disagree with you on that point, the point being that if it is in the 1965 budget, they will not be able to start building unless they build in the winter, until—the proper time to construct is in the summer; therefore, it would be the middle of 1965.

The point I am driving at is if the funds are in the 1964 budget, you can start basic construction in the summer of 1964 and complete the building in the fall, early part of 1965. You will delay the program not 3 months but you will delay the program something like 6 to 9 months.

That is why I am asking if it will be acceptable to the chairman and others to present it in the present budget.

Mr. FOGARTY. I am not for delaying these research programs.

Mr. LESINSKI. With the Chair's permission, I would like to have the letter from Edward Connor, president pro tem of the common council of the City of Detroit, and also the letter from Ralph A. Sawyer, of the University of Michigan, Ann Arbor, Mich., put in the record at this point.

Mr. FOGARTY. We will place them in the record.

(The letters are as follows:)

CITY OF DETROIT,
COMMON COUNCIL,
February 21, 1963.

Congressman JOHN LESINSKI,
House of Representatives,
Washington, D.C.

DEAR JOHN: Since discussing with you the authorized HEW regional field laboratory and research facility approved for location at Ann Arbor, the University of Michigan, I have checked into the situation further.

Your information was absolutely right. The final determination on Ann Arbor as the location has been made and the $200,000 for the planning and engineering of the facility is available. However, two problems remain.

The first is the desirability of including in next year's Federal budget the $3 million estimated cost of the buildings that will be needed. This would permit construction to begin in the spring of next year. Expediting this project in every way possible is, of course, most desirable and a point on which I am sure you need no selling. If such an appropriation is not made in the budget now under consideration, it means a gap will occur between the completion of the engineering designs and the beginning of construction which would be anywhere from several months to well over a year.

The second need is for an appropriation that will permit recruitment of the personnel needed, particularly the top echelon—the scientists and research personnel involved. As you know, persons of the caliber needed are in scarce supply and great demand, and it takes considerable negotiation sometime before they are available. In addition, of course, as soon as some of them are made available, contacts at the university indicate space may be made available so that the center can be placed in operation, in its preliminary stages at least, at the earliest possible date.

It is on these two points that we appreciate very much your help and assistance. If there is further information I can furnish you or if there is needed indications of support, cooperation, etc., from the university, any of the local governmental units involved, or any of the organizations concerned with this important problem of water pollution in the Great Lakes area, let me know. I am sure I can secure this kind of material and support that would be needed.

Thanks again.

Sincerely,

ED.

THE UNIVERSITY OF MICHIGAN,
Ann Arbor, February 20, 1963.

Hon. JOHN LESINSKI.
Representative 16th Congressional District, Michigan,
House Office Building, Washington, D.C.

DEAR CONGRESSMAN LESINSKI: Recently, the Secretary of Health, Education, and Welfare announced the selection of Ann Arbor as the location for the Midwest Water Pollution Control Laboratory. While planning funds are available, construction funds have not as yet been authorized.

Your support in expediting, in whatever way possible, the authorization of appropriate funds will be greatly appreciated. The sooner the laboratory is completed, the sooner the Federal Government, State agencies, and the university's research staff can begin to collaborate in this new attack on water pollution problems. A brief description of the project and its present status is attached for your information. Thanking you in advance for your support, I am,

Sincerely yours,

RALPH A. SAWYER.

MIDWEST WATER POLLUTION CONTROL LABORATORY

The Secretary of Health, Education, and Welfare has announced that the location of the Midwest Water Pollution Control Laboratory will be at the University of Michigan, Ann Arbor, Mich. Planning funds are available for site acquisition and development for this facility.

The 1961 amendments to the Water Pollution Control Act marked out seven regional laboratories to be established for use by the Federal water pollution control program. Two additional laboratories were added in appropriation action during the last session of Congress. To date, the Secretary has announced the location of eight of these. (See laboratory location and funding status on attachment.)

The Midwest Laboratory is the only one of the authorized and announced laboratories that does not now have construction funds either on hand or included in the President's 1964 budget. The University of Michigan and the associated Big 10 universities and others are anxious to have the construction of this Midwest research facility underway at the earliest possible time.

The midwestern regional laboratory will serve a 14-State area adjacent to and near the Great Lakes. Congress and the Nation have always been aware of the special nature and value of the Great Lakes and, in the 1961 amendments to the Federal Water Pollution Control Act, special reference is made to the work necessary to assure its wise conservation and use.

Section 4(f) of that act requires that the Secretary of Health, Education, and Welfare shall conduct research and technical development work, and make studies (with respect to the quality of the waters of the Great Lakes) including (*a*) an analysis of the present and projected future water quality of the Great Lakes under varying conditions of waste treatment and disposal, (*b*) an evaluation of the water quality needs of those to be served by such waters, (*c*) an evaluation of municipal, industrial, and vessel waste treatment and disposal practices with respect to such waters, and (*d*) a study of alternate means of solving water pollution problems (including additional waste treatment measures) with respect to such waters.

Investigations of the effect of sewage and waste disposal over the 100,000 square miles of the lakes and their quarter-billion-square-mile drainage area has already been authorized by the Congress in a Great Lakes comprehensive program project.

The Midwest Regional Laboratory will carry out research and specialized investigations for the Great Lakes project and will initiate the special research tasks identified by the Congress needed to control and prevent pollution on the Great Lakes. In addition, problems of acid drainage from mines, excessively low flow in streams tributary to the lakes, industrial wastes from some of the Nation's largest industrial complexes, and the interrelated problems of lake currents and the massive and complicated discharges from the civilization that man has built on the Great Lakes will be immediate tasks confronting the Midwest Regional Laboratory.

Over 50 million people live on the shores of the Great Lakes and nearly all take their drinking water from them. Cities and industries are expected to spend over $30 billion to satisfy their water needs by 1975. Michigan alone has a tourist income of nearly three-quarters of a billion dollars annually largely dependent on water recreation. But already bathing beaches, sport and commercial fishing, wildlife and water supplies have been impaired in many places.

Because of its service area, population density, industrial complexity, and the importance of the Great Lakes and other major river basins to be served by this laboratory, a sum in the approximate amount of $3 million will be needed to construct a facility to meet the special conditions in the Midwest region.

Concurrently with the need for construction funds, there exists a need to initiate at the earliest possible date, a recruitment and training program to formulate the basic staff needed to carry out the operations of the Midwest Regional Laboratory. An initial sum of one-half million dollars during fiscal year 1964 would allow the development of a basic scientific cadre, training as necessary, and the undertaking of several important research tasks which should not await the completion of the building itself. Interim arrangements have been made for housing the basic cadre pending building completion.

This would not only assure the beginning of important research work, but provide for an orderly buildup of staff in the facility when it is completed by having a trained team of experts ready to move in.

U.S. Department of Health, Education, and Welfare

PUBLIC HEALTH SERVICE REGIONAL LABORATORIES

Location and status of funds

Name	Location	Planning funds [1]	Construction funds
Pacific Northwest	Corvallis, Oreg. (Oregon State University).	Available	$2,000,000.
Southwest	Ada, Okla. (Oklahoma State Teachers College).	do	$2,000,000.
Southeast	Athens, Ga. (University of Georgia).	do	$2,200,000 (added in appropriation action during 1962 congressional session).
Northeast	Greater Boston, Mass. area	do	$2,500,000 (included in President's budget for fiscal year 1964).
Alaska	Fairbanks (College), Alaska (University of Alaska).	do	Do.
Water Quality Laboratory, Salt Water.	Kingston, R.I.	do	$4,000,000 for these 2 laboratories added in appropriation action during 1962 congressional session.
Water Quality Laboratories, Fresh Water.	Duluth, Minn.	do	
Midwest	Ann Arbor, Mich. (University of Michigan).	do	None at present and none included in President's budget in fiscal year 1964.
Mid-Atlantic	Not yet announced		

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[1] $1,600,000 available for all planning.

Mr. LESINSKI. Just one other thing, Dr. Terry, I respect your job; you are doing a wonderful job. You have quite an obligation on your hands.

Dr. TERRY. Thank you, sir.

Mr. LESINSKI. And those of us who are concerned with our Nation naturally sometimes like to pump you fellows a little too much. Maybe you feel you are at the wrong end of the gun, but it is not my intent, I am not the kind of person that enjoys tearing into people; that is not my nature. On the other hand, I like to know what is going on.

Dr. TERRY. This is your business, to find out. This is your responsibility.

Mr. LESINSKI. I would commend you in the way you are handling yourself answering questions. You are doing a good job downtown.

USE OF AUTOMATIC DATA PROCESSING EQUIPMENT

Again to repeat what I said before, I think you could have better coordination with less personnel by having proper equipment if you send computer tapes, have them sent in from all parts of the country. You could have them coordinated very easily. I know the Bureau of the Census would give you a hand if you needed help.

Dr. TERRY. We are fairly sophisticated in terms of a lot of our operations already. For instance, our Medlars program at the National Library of Medicine, and in terms of our National Center for Health Statistics. We have some very important machine operations going on. And we are constantly aware of this in terms of what exists now and potential developments in their utilization.

The important thing, I feel, that we have not completely understood each other on is that you think of this center as merely a machine center where the information would be brought in and correlated, coordinated.

Mr. LESINSKI. Yes.

Dr. TERRY. That is only a part of it. The other important thing is to have highly qualified professional and technical competence in this center which would help us coordinate the scientific activities as well as what information there is on the machines.

I think this is the key to it. In other words, we are talking about a combination of administrative center, which would be supported by highly qualified professional and technical competence, actually working in laboratories.

Dr. HUNDLEY. Mr. Chairman, may I make one comment which relates to both your comment and your earlier line of questioning on General Sarnoff's article?

Preparatory to the conference that is described in the yellow document Dr. Terry gave you this morning, the communications conference of last November, we developed a number of specific proposals, many of them relating to automation, use of machines, computers, and so forth. Some were deliberately very advanced, including some of General Sarnoff's ideas.

At this meeting we had 40 of the best outside experts we could get in the whole country. General Sarnoff was invited, although he was unable to come. In general, the effect of their recommendations was to bring us down to earth instead of putting us up in the clouds. They made us aware of the limitations that still exist in the application of computer technology to these problems. They were far more conservative and cautious than our proposals were.

Computers have great potential and we see a great future for them, but they do have limitations, some of which will be overcome perhaps and some of which may not. It is not just a problem of getting a few machines and solving the problem; it is much more complex.

FERTILIZER RESEARCH

Mr. LESINSKI. In line with your reasoning on this center, have you gone into the effects of artificial fertilizers on foods and the effects on the human body?

Dr. TERRY. Yes; we have been working in this area because of the rising problem in relation to pesticides.

For instance, there has been an interdepartmental committee at the Federal level which has been watching and studying this. It consists of representatives from our Department, from Agriculture, from Interior, and various other agencies involved. But in addition, we have research going on studying the effects of many of these chemicals. We have in Atlanta, Ga., one segment of our program, which is devoted to, very specifically, the problems related to insecticides, pesticides, and so forth.

Mr. LESINSKI. Well, how about possible toxic effects of use of artificial fertilizers in foods which a person eats.

Dr. TERRY. As you know, both the Food and Drug Administration and the Department of Agriculture and we are all involved in this, and we do have work going on.

Mr. LESINSKI. There is a trend of thought going on in the country, that these various chemicals are one of the reasons for increase in cancer in the Nation.

Dr. TERRY. That is one theory, although it has not been proved. And of course the potentialities will vary with almost every chemical you have. Therefore, one has to look into those aspects of it. So a great deal of research is needed.

Mr. LESINSKI. Off the record.

(Discussion off the record.)

RESEARCH ON WATER POLLUTION FROM DETERGENTS

Dr. TERRY. There is a very active program going on to develop control procedures. I think the problem that one faces is that the American public is not willing to give up its detergents, despite the problems that have been produced. Whether it could be legislated I do not know.

I think the more important thing, along the line that you were talking about, is a question of research to develop other detergents which do deteriorate, disintegrate in water with bacterial action.

Mr. LESINSKI. Wyandotte Chemical, which is a chemical company within my district, Wyandotte, Mich., has a detergent available today, except it costs a little more than the detergents in use at the present time. It is a matter of economics I imagine why they cannot sell any amount. But I believe that if you popularize the fact, people, like you said, like detergents presently used and are not realizing the potential dangers to our water in America at a future date——

Dr. TERRY. This is one of the problems. It also is a question of how much danger is there, Mr. Lesinski. We do not even know. We need research on the subject, sir.

NEED FOR WATER POLLUTION RESEARCH

Mr. LESINSKI. In other words, it is like the old saying, if you lock the barn after the horse is stolen, it may be too late and then when there is an emergency, the children of present America will be crying.

Some claim by 1970 we will be in bad shape—by 1980, rather, we will be in bad shape as far as water is concerned.

Dr. TERRY. Of course we do not have all the facts on which to base that because we do not know yet how practicable it will be to convert sea water for general utilization purposes. We do not know other things that may develop in time.

I admit there is a real basis for concern about the water supply in this country if we continue as we are without significant developments to help abate it during the coming years.

MIDWEST LABORATORY

Mr. LESINSKI. Well, that is why I brought up the subject of the matter of the Water Pollution Center in the University of Michigan. This problem, I think, is very, very important, even a year, 6 months, is essential. Because we have a lot of problems in the area of water pollution.

Dr. TERRY. If we may——

Mr. FOGARTY. This is something the committee can do.

Dr. TERRY. Well, we will have direct testimony from the water pollution control program before your committee. At that time I would appreciate it if you would take it up in terms of how feasible they think it is to actually move ahead that fast.

There are technical details I do not know. In other words, I am not certain at the moment that even if the committtee put extra money in our budget to provide for this specific purpose that we would be able to move that fast. Our program people will have answers.

Mr. LESINSKI. What I am driving at is this, I have checked the matter out and the University of Michigan has space available, a minimum amount of space available to start the program.

Now if the money is in the budget, in the 1964 budget, then they will start bringing together qualified men, and they are hard to get.

Dr. TERRY. Oh, this is going to be done. I was talking strictly about building physical facilities. I have been told they do have space there where they can accommodate the people and get started even before their physical facilities are completed.

Mr. LESINSKI. But with the building in the budget, they can go right ahead and start recruiting——

Dr. TERRY. I think they can go ahead anyhow. My only question would be if our technical people in the program feel they can move ahead faster if this money were made available to them. I do not know the answer, sir. They will be able to answer it.

I would like to have their expression on it and I will see that this is presented to you.

Mr. Fogarty. There is nothing wrong with having seven of these laboratories scattered over the country, is there?

Dr. Terry. No; it is wonderful. We need more research. The question is how fast can you move in putting them into operation in terms of manpower that is available, in terms of the proper design of the facilities, and this sort of thing?

Mr. Fogarty. Congress did authorize the building of seven of these.

Dr. Terry. Right. Obviously the problems in Fairbanks, Alaska, and Ada, Okla., and Ann Arbor, Mich., will not be the same. One of the reasons for having regional laboratories is to have the work specifically in relation to regional problems. The other important thing is to place them in relation to a university which would help in training the badly needed manpower.

Mr. Lesinski. According to the list I have here, they are: Corvalis, Oreg.; Ada, Okla.; Athens, Ga.; Boston, Mass., area; Fairbanks, Alaska; Kingston, R.I.—you have one, too——

Dr. Terry. Kingston and Ann Arbor are the two called water-quality laboratories.

Mr. Lesinski. Ann Arbor—but my anxiety about this is the fact the very thing we have been talking about before, when we move too fast, we have not the trained personnel. They want to proceed with the building as soon as possible so they can proceed more slowly to get properly trained personnel.

Dr. Terry. We are anxious to move as fast as we possibly can.

Mr. Lesinski. I appreciate that.

Dr. Terry. We not only need the research, but we need that facility for training of manpower, which I think will be a very important part of its function.

Mr. Lesinski. Thank you, Doctor, I appreciate the help very much.

RESULTS OF CANCER RESEARCH

Mr. Fogarty. The same thing is happening in the cancer field; is it not? We are doing a great amount of work in the field of training in the field of cancer.

Dr. Terry. Oh, yes; some of our most important funds allocated through the NIH, and in our own facilities, are used for training personnel.

Mr. Fogarty. Cancer is still the second leading cause of death, is it not?

Dr. Terry. Yes, sir.

Mr. Fogarty. Is there a more horrible death than to linger on for a year or year and a half with cancer, that you can think of?

Dr. Terry. I do not think so; no, sir.

Mr. Fogarty. We have made significant advances in the last few years.

Dr. Terry. Yes, sir, we have.

Mr. Fogarty. One out of three is saved now instead of one out of four.

Dr. Terry. That is right, sir.

Mr. Fogarty. If the people only went to their doctor in time, one out of two could be saved. That is a tremendous advance.

It would not make any difference to me how much money was spent as long as we are saving this many lives.

Dr. Terry. As long as it is wisely spent, I completely agree with you, sir.

Mr. Fogarty. We will recess until 2 o'clock.

AFTERNOON SESSION

Mr. Fogarty. The committee will come to order.

Report "Lifetime Learning for Physicians"

I would like to call attention to the report "Lifetime Learning for Physicians," a report of the joint study in continuing medical education. I understand this was a jointly sponsored study under the auspices of the American Medical Association, Association of American Medical Colleges, American Academy of General Practice, American Academy of Pediatrics, American College of Obstetricians & Gynecologists, American College of Physicians, American Hospital Association, and the American Psychiatric Association, so it involves practically all of the experts concerned with medical education. In view of this fact and in view of this serious problem in health manpower, I think that this report is worthy of serious consideration and contains some very important implications for the future insofar as health manpower is concerned. Are you familiar with this report?

Dr. Terry. Yes. Dr. Dryer consulted with us during the writing of the report. It was also a major subject at our November conference on health communications.

Mr. Fogarty. Now, this report makes reference to the Study of Medical Schools made by Dr. Flexner back in 1910 because the Carnegie Foundation and the AMA are concerned about the medical education situation and I understand that the impact of Dr. Flexner's report was so great that about one-third of the medical schools had to close up. Now, I think this history is important because of the following statement, which is contained in the foreword of the report:

> The revolution in medical education that followed the Flexner report of 1910 was precipitated by the fact that the then-developing body of scientific knowledge was not being translated into medical practice by the then-existing system of medical education.
>
> The gap between what was known and what was taught was unnecessarily wide. "Now, more than 50 years later, we find again that medical education has much in common with the era of the Flexner report—the gap between what is known and what is taught is wider than can be justified.

What do you think about that statement?

Dr. Terry. It is particularly true at the so-called continuing medical education level. While continued improvement in teaching at the undergraduate and immediate postgraduate level is certainly necessary, I believe our biggest challenge is to bring new knowledge to the physicians in practice. Some of these have been away from formal training for many years. They are not always completely up to date.

Mr. Fogarty. Now, a little later on in the foreword of the report, which incidentally is written by Dr. Ward Darley, executive director, Association of American Medical Colleges, the following statement is made:

> Education for medicine must move from objectives placing such great emphasis upon the acquisition of information toward objectives more effectively promoting the ability to select, organize, and evaluate information.
>
> In this shift of objectives the acquisition of information becomes a means to an end as well as an end in itself and the manner of learning as well as what is learned can receive the proper emphasis.
>
> This reassessment of objectives with consequent changes in methods of teaching and learning must occur at all levels of physician education; the medical school, internship, residency, and professional practice.

What is your reaction to this statement? Do you agree with this diagnosis?

Dr. Terry. Yes, particularly at the last—the professional practice—level.

Mr. Fogarty. Now, the Community Health Services and Facilities Act does not help much with this problem, does it?

Dr. Terry. Yes and no. This program is intended primarily to make adequate medical care more generally available. When the additional facilities and services are provided, however, considerable attention is paid to improving the quality and the efficiency of medical practice as well as its availability.

Health Manpower Shortages

Mr. Fogarty. As a matter of fact, since the purpose of this act was to stimulate the improvement and extension of out-of-hospital services, it actually makes the problem worse by creating greater demands for health services and increasing needs for health manpower of all sorts. Is that not true?

Dr. Terry. It is certainly true that whenever good medical care becomes more accessible much previously neglected pain and suffering seems to present itself to the doctors.

Mr. Fogarty. Is there enough manpower availability to provide for these expanding programs. One hears talk from all sides about shortages of physicians and other health personnel. Is it true that there is a growing shortage of family physicians? Do you have any accurate figures on these needs?

SHORTAGE OF FAMILY PHYSICIANS

Dr. Terry. The supply of physicians and other health manpower is indeed inadequate. Looking back over the past decade we have seen increasing pressure on the supply of physicians—to meet needs in research, medical education, hospital service as well as in private practice. The increase in medical knowledge brings increasing needs for specialists in many fields. With the increase in specialization there has been a rapid decline in the supply of family physicians. In 1950 there were 1,300 people for each potential family physician (that is, all general practitioners, internists, and pediatricians in private practice). By 1962 the ratio had risen to 1,900 people per family physician. We certainly have need today for more family physicians. I do not think, however, that we can today set a numerical goal in this area. Rather we must give assistance and encouragement here as in other areas. But I want to emphasize that even though larger numbers of young physicians are going on for specialized training and thereby are being removed from the pool available to provide family health services, this is not a net loss to the health care picture. Quite the contrary, with the rapid pace of advance in medical science and the increasing need for highly specialized skills in medicine, the increasing numbers entering specialty practice and the growth of teaching and research staffs are contributing greatly to overall improvement in the quality of medical care. In fact, the increases have been too small. There are today many unmet needs in fields other than family practice.

All of these needs emphasize the urgent importance of our proposals for aid to medical school construction and medical student assistance. But in the meantime and in full awareness of the total shortage it is our responsibility to identify areas of particular importance, and to expand our programs in these areas.

SHORTAGE OF SPECIALISTS

Mr. Fogarty. How about other specialties which particularly relate to the chronic diseases and long-term illness and disability? I am told that there are only some 400 specialists in medical rehabilitation in the country despite the fact that rough estimates place the need currently in the neighborhood of 2,500 and, with the increase in the number of aged there is an increase in chronic diseases, so these needs are certain to rise greatly in the future.

How about some of the other specialities that relate to these chronic diseases?

How about neurologists and others that deal with problems like mental retardation? Somewhere I heard that more than four times the number in practice were needed. For this reason Congress appropriated some more money and suggested that emphasis be given to training for professional and technical assistance. Have you made any progress here?

Dr. Terry. Within the total problem of chronic diseases the neurological and sensory disorders are one major category. The latest estimate as contained in the report on extramural training activities survey of the National Institute of Neurological Diseases and Blindness (December 23, 1961) demonstrated a substantial shortage of medical specialists to provide service in neurology, ophthalmology, and otolaryngology.

(The following was supplied for the record:)

	Practicing specialists	1960 needs [1]
Clinical neurology	600	2, 690
Clinical ophthalmology	5, 523	9, 000
Clinical otolaryngology	3, 306	5, 300

[1] Based on established population ratios.

However, we are concerned with more than a critical shortage of the recognized medical specialists such as neurologists, ophthalmologists, otolaryngologists, neurological surgeons, pediatric neurologists, and so forth. The total problem requires a team approach utilizing many allied professions such as speech pathology, audiology, nursing, physical therapy, medical social work and many essential technologies. Existing personnel must be brought up to date, personnel now in training must receive more specific categorical knowledge, additional manpower must be recruited and more effective means of utilization of our manpower and facilities must be sought.

Funds appropriated for professional and technical assistance have permitted a start in this direction. The Professional Training Section of the Neurological and Sensory Disease Service program of the Bureau of State Services has been established. A major activity of this program has been the initiation of a broad grant program designed (1) to assist in the expansion and enrichment of the existing academic programs of training physicians and allied medical specialists working in the area of the neurological and sensory disorders, (2) to promote the more rapid dissemination and utilization of recent medical advances through short courses, (3) to alert the general medical profession to the problems in order that these disorders may be recognized more promptly, and (4) to initiate special studies and pilot projects designed to facilitate a more effective utilization of available professional manpower.

SHORTAGE OF THERAPISTS

Mr. Fogarty. A few years ago this committee, out of concern for the supply of physical therapists, added some extra money to the appropriation for this purpose. Actually, how many did you get trained? This really is a drop in the bucket, is it not?

Dr. Terry. Out of funds appropriated for training nurses in restorative nursing a total of 212 nurses in teaching, administrator, and supervisory positions will be trained through 12 short-term courses by June 30, 1963. We are also providing this training to staff public health nurses through contracts with rehabilitation institutions and universities and a total of 309 nurses will have received this training from contracts currently in effect.

Under both methods of providing training in restorative nursing, we will have trained a total of 521 nurses since January 1, 1962.

Mr. Fogarty. From talking to the medical rehabilitation people at a meeting up in Boston, I understand the need for physical and occupational therapists, if all of the people who needed service were to get it, is about seven times the existing number. I also understand that a lot of these programs for expanding hospital service for the chronically ill and aged are hamstrung for lack of enough physical and occupational therapists. How many are there now?

Dr. Terry. There are approximately 8,500 physical therapists and 6,000 occupational therapists in practice today. Generalized estimates have been made of the across-the-board shortage to meet existing workloads for vocational and all other program requirements in the order of 12,000 for physical therapists and 10,000 for occupational therapists. We do not know of specific estimates for needs for chronic disease programs alone.

Mr. Fogarty. Speaking of the future reminds me that every prediction that I have seen indicates that there will continue to be a rise in total population as well as great increases in the proportion of older people and younger people who are the greatest users of health services. Is this true? Do you have any figures on this?

Dr. Terry. I can submit that for the record.

(The information follows:)

The latest Census Bureau estimates of population for these groups are as follows:

[In thousands]

	July 1960	1980 estimate range
Total population	180, 676	245, 736–259, 584
Under 21	71, 846	99, 056–112, 904
65 and over	16, 659	24, 4

Mr. Fogarty. So when you look at things realistically, this severe problem of manpower for health services that exists already is not going to improve as time goes on unless something is done, is it?

Dr. Terry. No, sir. On the basis of the population trends, there can be no doubt that the manpower problems will become more difficult in the future.

SHORTAGE OF NURSES

Mr. Fogarty. How about nurses? Everybody talks about the shortage of nurses. Have you anything to report on this?

Dr. Terry. I can submit a report for the record.

(The requested report follows:)

There were 550,000 professional nurses and 225,000 practical nurses in active practice in 1962. This number is far too small to meet the needs for high-quality nursing care. Too many hospitals have been required to rely on inadequately trained orderlies and attendants. At my request, a distinguished group of citizens, serving as consultants to the Surgeon General, has studied the scope and solutions of this problem. They concluded that a feasible and essential goal for 1970 is to increase the number of professional nurses in practice to some 680,000 and the number of practical nurses to 350,000. This requires a 25-percent increase in the supply of nursing personnel and, therefore, a major expansion in both collegiate and hospital programs of nursing education. The number of nurses graduating from collegiate courses would have to double from 4,000 in 1960 to at least 8,000 in 1970. This expansion would require the equivalent of more than 30 to 35 new collegiate nursing schools. Graduates from hospital schools would have to increase from 25,000 to 40,000 by 1970, and junior colleges would have to be graduating 5,000 by that year.

Nursing schools are unable to bear the tremendous financial burden for an expanded effort of this size. Despite diligent effort, nursing has had little success in commanding sufficient local support for the development of its educational facilities and programs. Federal assistance in the expansion of our capacity to train nurses will be necessary.

To meet these goals, and generally to improve the quality of nursing services, the consultant group recommended that the Federal Government (1) provide financial assistance to expand teaching facilities for nurses' training; (2) provide financial assistance to students of nursing, many of whom cannot afford an education beyond high school; (3) initiate new and improved programs for the support of graduate nursing education, to provide more teachers of nursing; and (4) initiate new programs and expand current programs of research which are directed toward improved utilization of nursing personnel.

SHORTAGE OF HOMEMAKERS

Mr. Fogarty. What about the supply of homemakers? I have been told that these people are very important to homecare programs and yet, in many areas, the supply is so small compared with the demand that most of the people who need this kind of help can never get it. Do you have figures on how many of these there are and how many are needed and will be needed in the future? Do you have any program for this?

Dr. Terry. I will submit information on that for the record.

(The information follows:)

Homemakers, sometimes called home health aids or visiting home aids, are in short supply. The movement, however, is growing rapidly.

Acceleration in the growth of programs beginning in the 1950's is one important trend. Expansion of auspices is another. The recent expansion is nationwide. Between 1958 and 1961, for example, 55 communities previously without a program developed one. As a result, by late 1961, 158 communities in 40 States had programs. Since the close of 1961 at least 20 additional programs have come into existence—3 of them in States previously without a program. More are in the drafting stage.

The trend to employ part-time homemakers is significant. Between 1958 and 1961 the number of homemakers increased from 1,778 to 2,700. Thus, almost 1,000 new workers were added. Thirty-five percent of the total were part-time employees. The wide acceptance of the desirability of employing part-time homemakers and providing part-time service represents a significant shift in the thinking which characterized the programs of the 1920's and 1930's.

More agencies are now giving service to adult families and the chronically ill. In 1961, 199 of the 208 agencies reported that they served families with children; 115 served ill and disabled persons; and 132 served aged persons. Only 65 indicated that they served only families with children.

On the basis of some European countries which have used homemakers for a longer period of time, we may need to think of as much as a hundredfold increase. The United States had 1 homemaker per 100,000 population in 1958 as compared with Denmark's 1 per 1,000.

One example will suffice to indicate how rapidly this service can be developed. The Visiting Nurse Association of Rochester and Monroe County, N.Y., trained its first 10 homemakers in the fall of 1960. First service was given in January 1961. By October 1962, 77 part-time aids had been trained and employed.

Through authority provided under Public Law 395, our program for assisting community health agencies to develop homemaking services programs serving the chronically ill and aged provides project grant assistance for recruiting, training, and providing homemakers for these purposes. In addition, many States are using formula grant funds available under Public Law 395 for supporting community development of new homemaker services activities including training.

Report "Lifetime Learning for Physicians"

Mr. Fogarty. Getting back to this report "Lifetime Learning for Physicians," what were the major recommendations of that report?

Dr. Terry. The report contains a series of well-thought-out approaches to bringing modern medical knowledge to physicians who are now in practice. At the present time there is little overall planning for continuing medical educational programs. The report recommends the formation of a nationwide coordinating structure, since the problems are nationwide. The plan would "reinforce existing personal, community, regional, and national educational resources" by collecting the most effective training programs and making them available to all on a planned, rather than random, basis. Dr. Dryer refers to the organization as a "university without walls" to emphasize the nationwide aspects, and the fact that the "faculty" would consist of the best active teachers, wherever located, to bring, effectively, new medical knowledge to physicians. In the words of the report:

> Clearly, a national plan to continue the scientific education of busy, critical, and responsible practitioners can succeed only with superlative teachers who are widely recognized and appropriately rewarded.

Mr. FOGARTY. Did the recommendations only relate to the continuing education of physicians?

Dr. TERRY. Yes; only physicians.

Mr. FOGARTY. Therefore, though the study indicated that the problem involved all levels of physician education, that is, medical schools, internship, residency, and professional practice, the report only dealt with the latter element. What progress has been made in implementation of this report?

Dr. TERRY. This plan is actually for a huge cooperating venture, among physicians, medical teachers, medical school and hospital administrators, and medical societies. In order for it to succeed, all of these people must understand it and begin to implement it. The American Medical Association, at its November meeting last year, directed its own staff to develop further plans for a national program of continuing medical education, utilizing its own resources and those of other interested parties. Pilot projects are now being designed; one may be set up on the east coast, one on the west. Current discussions are being held on the possible roles of medical libraries and what needs to be done to make them more useful in this area, more formal arrangements between medical center libraries and community hospital libraries, for example.

The Association of American Medical Colleges has taken formal action through its executive council, to "accept a continuing responsibility between medical schools and the practicing physicians." This is a major step forward, since this organization, and the medical schools generally, have focused in the past almost entirely on their responsibilities in undergraduate and direct postgraduate medical education.

I think we are moving ahead, but the Service must continue to rely on the physicians and their own organizations to take the first steps. We could help in the actual implementation, of course. One idea that we are studying, for example, is the establishment of a series of special medical faculty awards, to provide rather substantial stipends over a 5-year period to truly outstanding medical teachers to encourage them to devote more time and effort in a coordinated, cooperative effort to bring to practicing physicians more comprehensive appreciation of new medical knowledge.

FLEXNER REPORT

Mr. FOGARTY. It has hardly had the impact that the Flexner report had, which closed down a number of schools, has it?

Dr. TERRY. The Flexner report was preceded by at least 2 years of critical study and hard thinking on the part of organized medicine, including the American Medical Association and the Association of American Medical Colleges. However, I believe the Dryer report will have a tremendously favorable impact, within 2 or 3 years. At least I hope so.

Mr. FOGARTY. Well these are more specific questions than the two overall questions I asked you this morning in the area of rehabilitation.

Dr. TERRY. Yes, sir.

Mr. FOGARTY. Mr. Denton.

Mr. DENTON. No questions.

Mr. FOGARTY. Mr. Laird.

SITE SELECTION OF MIDWEST WATER POLLUTION CONTROL LABORATORY

Mr. LAIRD. Dr. Terry, did you read over the recommendations and the findings of the site selection group for the water pollution laboratory in the Midwest?

Dr. TERRY. Yes, sir.

Mr. LAIRD. Did you make the recommendations contained in the letter of January 7 addressed to the Assistant Secretary of Health, Education, and Welfare?

Dr. TERRY. Yes, sir.

Mr. LAIRD. It would seem to me from reading over section Q of that report that the recommendation and findings of the visitation committee would indicate that the University of Wisconsin had the greatest capability in this particular area.

Dr. TERRY. I do not think it was the intention of the statement to say that it had the greatest.

Mr. LAIRD. Well it pointed out that in the biological sciences they have graduated twice as many Ph. D.'s as the University of Michigan. The amendment in the bill providing for these seven regional laboratories was brought about and was the recommendation of the University of Wisconsin. You are familiar with that?

Dr. TERRY. I am not sure I understand that, sir.

Mr. LAIRD. In the authorizing legislation for these laboratories—this originated at the University of Wisconsin. This was their suggestion—The researchers from the University of Wisconsin suggested these seven regional laboratories.

Dr. TERRY. I was not aware of that. Our program people may have been.

LETTER FROM CONGRESSMAN LAIRD TO SECRETARY

Mr. LAIRD. Were you familiar with the letter which I addressed to the Secretary of Health, Education, and Welfare and the conversations which I had with him asking for an opportunity to have a hearing on this site selection before a decision was made?

Dr. TERRY. No, sir. I do not know about that. I believe Mr. Quigley is here who knows some of the details with regard to that if you would like him to testify.

Mr. LAIRD. Evidently things are not very well coordinated in the Department of Health, Education, and Welfare, are they?

Dr. TERRY. I think they are quite well coordinated, sir.

Mr. LAIRD. Well does the Secretary have any responsibility over your program?

Dr. TERRY. Yes, sir; he has complete responsibility over all of them.

Mr. LAIRD. When he agrees to something in your agency doesn't he usually consult with you, is that not generally the procedure that is followed?

Dr. TERRY. Yes, sir.

Mr. Kelly. I have, Mr. Laird, the letter that you addressed to the Secretary, dated September 11, 1961, and it does appear on the face of the letter. A clerical error occurred in the handling of the letter in that it was filed with an indication that it had been handled by a conversation between Mr. Miles and you. But in looking into the record, we find that that conversation did not relate to the water pollution laboratory at all, but the distribution of NIH funds. And somebody apparently thought that it was a conversation that related to this and so the letter did not come to the attention of the Surgeon General and did not come to the attention of the Assistant Secretary, but mistakenly was sent to file.

Mr. Laird. I do not know all that is going on over there, but I think that maybe you just have too many employees running around in the Public Health Service and in the Secretary's office, and they get in each other's way so much that you cannot keep track of things over there any more.

Mr. Kelly. I am afraid that we think there is a problem in the Secretary's office of not enough.

Mr. Laird. Well I cannot believe that more personnel would have helped handle this. I had a request for some people who wanted to come in here and make a presentation. I assured them all that we would be given that opportunity after discussion with the Secretary.

ANNOUNCEMENT OF SITE SELECTION

Another thing that bothers me is that the announcement was made of this laboratory before you signed the letter of January 7.

Dr. Terry. I was not aware that that was done.

Mr. Laird. Well I have the press clippings and that would indicate that your letter must have been just more or less a formality.

Mr. Kelly. I do not think the Department made a release of the approval of the Secretary until the 11th of January, if I recall correctly, Mr. Laird. So that any press clipping relating to the selection of this site was not based on the Surgeon General's recommendation and the Secretary's approval of it until the 11th of January.

I would like to say in behalf of the Secretary that he regrets the fact that this letter of yours was not answered and you did not have an opportunity to make a presentation. I think he would want me to say that he would not want the record to make it appear that the University of Wisconsin was not considered. In fact I think there were 18 sites that were visited by staff of the Public Health Service and reports filed. These reports were evaluated by the Public Health Service giving rise to the recommendation of the Surgeon General. Included in the evaluation of the sites was a recommendation made by the coordinating committee of the Big Ten, which endorsed four of the applications for this laboratory, the University of Michigan was one of those four and the University of Wisconsin was another of those four. So that careful consideration was given to a great number of sites and the selection was endorsed by the same group that endorsed the University of Wisconsin.

Mr. FOGARTY. Mr. Lesinski, do you have any other questions?

Mr. LESINSKI. No, sir.

Mr. FOGARTY. Mr. Michel?

Mr. MICHEL. No, sir.

REPORT ON IMPROVEMENT OF COMMUNICATIONS IN THE BIOMEDICAL SCIENCES

Mr. FOGARTY. We have talked quite a bit about the field of communications. Before we take up the specific items in the budget we will place in the record the special report you have prepared on this subject.

(The report referred to follows:)

IMPROVEMENT OF COMMUNICATIONS IN THE BIOMEDICAL SCIENCES

A Report by the Public Health Service to the Subcommittee on Departments of Labor, and Health, Education, and Welfare Appropriations of the House Appropriations Committee, February 1963

During the past year the Public Health Service has looked searchingly at its present and future role in biomedical communications. The review has centered around four basic premises:

(1) Research is not completed until the results are effectively transmitted to the ultimate users whether they are scientists, health practitioners, or the public. Research without effective communication is not an acceptable goal.

(2) Recent developments in electronic methods for information handling promise some eventual solutions to the very old problems of selective location of specific information.

(3) Conventional methods for making research results most useful are insufficiently financed. Biomedical research is outpacing present communications resources.

(4) A reasonable amount of centralized planning and coordination of the Service's communications efforts is desirable for reasons of economy and efficiency, but communications programs must not be divorced from the sources of research results.

PUBLIC HEALTH SERVICE RELIANCE ON NON-GOVERNMENT INFORMATION SYSTEMS

As a result of increasing attention to the communication of scientific information by the Government, there has arisen a concern on the part of representatives of long-established private information systems that the Government may be contemplating a monopoly of the science information field.

The Public Health Service is well aware of the debt it owes information exchanges operating outside the Government and in developing its information programs will remain fully aware of the resources available in the private sector of the scientific community and of the effects its activities will have in this area.

The Public Health Service reliance on non-Government systems for biomedical communications has had several direct benefits. The most important of these is the maintenance of quality controls by the total scientific community, through the editorial boards of scientific journals and societies.

As a consequence the Service is not faced with the difficult problem of acceptance or rejection of grantee research reports for inclusion in a Government-controlled science information management system. Recipients of research grant funds from this agency retain responsibility for primary publication of their results, and of seeing to it that the quality of their offerings is high enough to be accepted for publication by a reputable journal. This system works well since a scientist's professional reputation—and his ability to secure support for his research—is dependent on his record of scientific productivity, measured by his peers.

Nevertheless, financial problems exist. An attempt to meet these, at least in part, is reflected by the Government-wide policy of permitting "page charges" as a direct cost of research; charges against grant funds for primary publication of results where these charges are made by the publisher to all authors. This is at best a stop-gap measure, producing certain inequities difficult to resolve.

The high cost of publication, coupled with the increasing volume of research results, has led to wasteful practices. Scientific journal editors are placing more and more emphasis on short papers; authors are frequently told to reduce the number of pages by a third, or a half, to be acceptable. Such abbreviation is often, but not always, desirable. More important is the hidden effect. All scientists realize the difficulties editors are facing and the unlikelihood for acceptance of manuscripts which deal with so-called "negative" results, or with experimentation in seemingly less important aspects of biomedical science. Such papers may, therefore, never be written. Discouraging primary publication has important long-range effects on scientific discovery.

The Public Health Service is ready to accept a larger part of the responsibility for the continuing health of our present systems for reporting the results of research through traditional, non-Government controlled channels.

THE NATURE OF SCIENTIFIC COMMUNICATION

Last year at this time the committee was given a fairly comprehensive statement regarding the nature of scientific communication as it is viewed by three of our operating arms: the Bureau of State Services, the National Library of Medicine, and the National Institutes of Health.

The committee's report, made after reviewing those submissions, indicated a full awareness of the need for stepped-up action in improving communication in the biomedical sciences.

The Service in its presentation to the committee at this time intends, therefore, to concentrate on describing action which has been taken in the area of scientific communication since our discussion here a year ago and on describing proposals for future action.

Before turning attention to the specifics of Service programs, however, the Service would like to invite the committee's attention to sources of additional information on the nature of communications: publications released during the past year which may be of interest to the committee members.

Dryer report.—In 1962 the Joint Study in Continuing Medical Education issued its report "Lifetime Learning for Physicians—Principles, Practices, Proposals" by Dr. Bernard V. Dryer.

This study has helped focus attention on continuing education for the medical profession, a subject of interest and concern to the Public Health Service.

Bloomquist report.—October 1962 was the publication date for a document on "The Status and Needs of Medical School Libraries in the United States," prepared for the National Library of Medicine, by Harold Bloomquist, assistant librarian, Harvard University Schools of Medicine and Public Health. This 30-page study contains helpful specifics on the depressed state of U.S. medical school libraries. It is recommended as containing background information for the committee's consideration of measures to improve the state of bio-medical libraries.

Summary of 1962 Public Health Service communications activities

In preparation for the Conference on Health Communications which was held in November last year, the Surgeon General requested of each major sector of the Public Health Service a review and analysis of its programs of science information. The detailed and comprehensive summary which resulted represents the first thorough study of Public Health Service science information activities as such and reveals a substantial magnitude of communication operations already in existence.

A further measure of the magnitude of scientific and technical information activity was the fiscal data submitted to the National Science Foundation for volume X of the Foundation's survey of "Federal Funds for Science." The Public Health Service is estimated to have intramural and extramural obligations for scientific and technical information of $13,216,000 for the fiscal year

1962, according to the definitions of communication activities used by the Foundation.

By contrast the more detailed and elaborate analysis carried out by the National Institutes of Health for the fiscal year 1962, showed a total expenditure of more than $60 million for "NIH Activities Directed Toward or Supportive of Biomedical Communications." The latter figure includes categories of activity not identified as communication in the National Science Foundation guidelines but considered as programs in health communications by the National Institutes of Health.

The intensive review and definition of activities which were a necessary part of preparing for the Surgeon General's Conference brought to attention programs which should be included in describing the present efforts of the Service in scientific and technical communications.

The Service believes it is appropriate to present at this point a descriptive summary of the communication activities of the major components of the Service during 1962.

This survey, similar to the one prepared for consultants at the Surgeon General's Conference on Health Communications at the end of last year, will acquaint the committee members with the operational activities, bearing directly on communication, of the main sectors of the Service.

Late in 1962, each major component of the Public Health Service (they are identified on the organization chart which is included) was asked to describe its current information operations. Those reports, in a brief summarized form, are attached as appendix material.

The survey of communication operations revealed the large quantity and variety of activities which constitute public health communications. To coordinate these many activities and to provide leadership and direction for the development of new programs, the Public Health Service during the past year has established and strengthened some significant foci for communication activities.

PRESENT ORGANIZATIONAL STRUCTURE FOR HANDLING SCIENCE INFORMATION

As with most institutions, the Public Health Service plays a variety of roles in communication each of which requires an appropriate organizational structure.

The Service must manage its own communication operations competently. At the same time, as a component of the Department of Health, Education, and Welfare, the Service has concern for the Department's communication programs, makes a contribution to them, and relates its activities to those of other components of the Department. Concurrently the Service has functions which involve it with Government agencies outside its own Department. And finally the Service relates to groups outside the Government and makes its own contributions to the scientific community.

Inter-Agency Committee on Scientific Information.—Through Department membership on the Committee on Scientific and Technical Information of the Federal Council for Science and Technology, the Public Health Service since June 1962, has made its contribution to the Council's effort to "promote coordination and improve planning and management of Federal programs in science and technology."

This committee serves as a channel for ideas to and from the separate agencies and is a valuable means of information exchange in its own operations.

Health, Education, and Welfare Committee on Science Information.—The Public Health Service is represented, along with all other major components, on the Departmental Committee on Science Information, which had its first meeting in July 1962.

Developments in science, medicine, or technology can lead to requirements for establishing new informal or formal associations among agencies. Providing for compatibility in computer operation, in abstracting, and in indexing, for example, may require closer association among agencies. The committee will speed and ease necessary realinements among agencies of the same department.

Public Health Service focuses on science information.—The recently established Public Health Service Committee on Science Information will serve the agency in the same manner the Health, Education, and Welfare Committee on Science Information serves the Department. The committee was established December 4, 1962, as one consequence of the Surgeon General's Conference on Health Communications the preceding month.

The committee has been formally constituted to furnish counsel to the Surgeon General on selected matters relating to science information.

Each of the following organizations within the Service has designated a committee member and an alternate to represent that organization:

(1) Bureau of Medical Services.
(2) Bureau of State Services (Community Health).
(3) Bureau of State Services (Environmental Health).
(4) National Institutes of Health.
(5) Executive Office, Public Health Service.
(6) National Center for Health Statistics.
(7) National Library of Medicine.
(8) Division of International Health.
(9) Office of Information and Publications.

Committee meetings are chaired by the special assistant to the Surgeon General for science information.

National Institutes of Health Committee on Science Information.—Similar functions are carried out within the National Institutes of Health (NIH) by the NIH Committee on Science Information, organized November 20, 1962, which is made up of representatives from the Director's office and each NIH Institute and Division.

Staff appointments in science information.—Immediately following the Surgeon General's Conference on Health Communications held in November 1962, the Surgeon General established the post of special assistant to the Surgeon General for science information and appointed Dr. F. Ellis Kelsey to fill that position. Dr. Kelsey, formerly associated with the NIH Division of Research Facilities and Resources, had served in the Surgeon General's office since June 1962, as project officer for the Surgeon General's conference.

On September 19, 1962, Dr. Shannon, NIH Director, designated Dr. Thomas Kennedy, who at that time was serving as a special assistant to Dr. Shannon, to exercise full responsibility for development and coordination of NIH activities in the field of scientific and technical communication. Dr. Shannon announced that for the immediate future Dr. Kennedy would serve within the organizational framework of the Office of Program Planning, with the possibility of establishment at a later date of an Office of Scientific and Technical Communications.

Also in September 1962, the Institute Directors and Division Chiefs of NIH were directed to establish the function of "scientific communication officer" in each Institute and Division.

The organization of committees and appointment of staff have served to provide a mechanism for coordination and cooperation on matters involving science information among all parts of the executive branch.

MAJOR ACTIVITIES AND TRENDS IN THE PUBLIC HEALTH SERVICE IN SCIENCE INFORMATION: 1962–63 PUBLIC HEALTH SERVICE PROGRAMS

During the past year the Surgeon General has given new duties to the National Library of Medicine, including shared responsibility in the scientific review of grant applications and a significant support program in translations.

The Library has the good fortune of having moved into a new and modern $7 million building located in Bethesda, Md., in April 1962, so that its programs are conducted in quarters which are comfortable, spacious, and beautiful.

Selective translation program.—The conversion of the Russian scientific translation program into a highly selective program directly responsive to the needs of American biomedical research was successfully completed with the appearance in January 1963 of the first issue of the Translation Supplement to the journal Federation Proceedings. Previously the program was limited to the cover-to-cover translation of nine Soviet research journals which contained material of varying quality. Under contract with the Federation of American Societies for Experimental Biology, the editorial apparatus of the Federation has been used for the critical review to date of 1,303 Soviet research papers; of these, 357 represent papers which in the opinion of American scientific editors are sufficiently original and sound as to merit translation. The first 50 of these translations were published in January; 47 more will appear in March 1963. The unpublished translations are being deposited with the Office of Technical Services for listing and individual sale.

This Translation Supplement is being distributed with Federation Proceedings to 11,000 scientists, and will be available in all biomedical libraries as well. It answers three criticisms of the program: First, that it did not report widely enough on Soviet research; second, that quality of work reported was irregular; and third, that the resulting translations were not widely enough distributed.

"Preventive" translation.—The Library achieved agreements with the Polish Scientific Medical Publishers (an organization of the Polish Ministry of Health) which called for the initial publication in Warsaw of 10 Polish biomedical research journals in the English language. Funds available under Public Law 480 are being used for this purpose, and copies of these journals are being distributed without charge to 400 American biomedical libraries. This accomplishment has both political and scientific interest, in that it advances a worldwide trend toward the use of the English language for international scientific communication, and heads off later translation requirements.

Medlars.—During the year, the General Electric Co., contractors for the development of Medlars (medical literature analysis and retrieval system), made signal progress. In this effort to computerize the Library's 80-year-old medical indexing function, a subcontract was let with Photon to develop a magnetic tape, high-speed, sophisticated printout device capable of composing the pages of the "Index Medicus" at 440 characters per second. A special report was prepared on "Secondary Objectives," which includes a feasibility study on the decentralization of search operations through the placement of medlars tape duplicates in other medical libraries, and a preliminary study of the costs of a microimage storage system to replace or to supplement the Library's photoduplication services.

Work is progressing on site preparation; computer delivery is expected in May. The first 6 months will consist of trial operations and debugging, with the first issue of the computerized Index Medicus scheduled for January 1964.

One feature of the Medlars output is the provision of 50 continuing bibliographies (or "current awareness services") at various periodicities on behalf of various fields of medical research. Over 60 groups have made informal approaches to the library; policies and procedures governing such uses are now being developed.

Medlars will prepare and place under computer controls a larger segment of the scientific literature than any system designed to date for any area of science. It is also the first system to be designed with a plan for sharing its retrieval potential on a nationwide basis.

Terminology dictionaries in the health sciences.—Systematic control over information requires agreement as to the meanings of specialized words and compatible lists of indexing terms. In recent meetings of great potential value, the representatives of Chemical Abstracts, Biological Abstracts, Excerpta Medica, and the National Library of Medicine have been attempting to reach agreement on terms and systems for indexes and abstracts.

As a necessary step in the preparations for the Medlars system, the Library thoroughly revised its system of controlled natural language vocabulary. The second edition of Mesh (medical subject headings), issued in January 1963, reflects the Library's concern in standardizing the vocabulary of indexing for computer input. Based on many other efforts to standardize nomenclatures nationally and internationally in the biomedical sciences, Mesh in addition to controlling the input to the computerized index system, constitutes the reservoir from which the scientific groups concerned draw to construct in specific detail the character of the searches or listing services required. Copies of the revised Mesh are being widely distributed for these purposes.

Biomedical serials.—The size of the universe of the literature in the biomedical sciences has been subject to much debate but little factfinding. As a contribution to defining the current volume of the literature, the library prepared and published "Biomedical Serials 1950–60." The library received during these years approximately 18,500 titles of continuing publications. Those reporting original work total 8,939; of these, 3,228 were inactive and presumed dead, leaving a net total of 5,711 titles of biomedical serials.

Conclusions to be drawn are (1) there is a mortality rate as well as a birth rate in the proliferating literature, and (2) the universe of research literature (i.e., that which contains new information) is manageable.

Advisory Committee on Scientific Publications.—An Advisory Committee on Scientific Publications has been established which will serve to provide a common technical review function for applications seeking support for scientific publications. The establishment of this committee is one of the steps taken during the past year by the Public Health Service to effect action nationally against the sizable and growing problems of scientific communications. This committee will review applications in the context of sound biomedical publishing policies and communications technology. It will coordinate with the bureaus, institutes, and divisions of the Public Health Service, in assessing the scientific merit of publication proposals and in developing common policies and procedures in the scientific publication field.

Systematic collection of drug information.—Collecting drug information is an urgent and important task for the Public Health Service and others who have responsibility for protecting human health. Solving the various problems involved in collecting and coordinating information about drugs may make it easier to cope with problems of information collection on health-related subjects other than drugs, so a successful approach to the drug problem will serve a dual purpose.

At the present time the Public Health Service is exploring the feasibility of defining in detail the specific kinds of drug information needed by each one of the groups that might reasonably be expected to be a major collaborator in an ultimate international network of drug information exchanges. A second purpose of the project being considered would be to collect information about sources of drug information, published and unpublished.

Responsibilities in the management of drug information.—In September 1962 Dr. James A. Shannon, NIH Director, testified before Senator Humphrey's Subcommittee on Reorganization and International Organizations about NIH actions in the field of scientific and technical communications.

Dr. Shannon announced during his presentation that the medical board of the NIH clinical center had established a task group on drug toxicity and reaction reporting, chaired by Dr. Joseph J. Bunim, clinical director of the National Institute of Arthritis and Metabolic Diseases. He referred to the program outlined by the group, for the study and reporting of toxicity and drug reactions arising within the clinical programs carried out within the clinical center. This system is planned as an experimental development looking toward the formulation of a model that can be extended to other major hospital centers in the United States.

The objective of this system will be to permit the continuing study, analysis, and reporting of data on the toxicity of, and adverse reactions to, drugs in current use, in the context of the total experience with such drugs in diverse clinical programs.

A second stage would be the extension of the system to a small number of major clinical settings to permit the inclusion of from 2,000 to 4,000 patients in this analysis of experience with drugs.

A final stage could involve broadening the coverage of this study and reporting program to include facilities whose patient load might total from a 20,000 to 50,000 daily census of patients.

Dr. Shannon also announced establishment of a Committee on the Management of Drug Information chaired by Dr. Thomas Kennedy, the special assistant to Dr. Shannon assigned to scientific and technical communication. This Committee is composed of the individuals assigned the communications responsibility within the Institutes and Divisions.

The final action concerning drug information announced by Dr. Shannon in his September 1962 testimony was assignment to the Committee on the Management of Drug Information of the responsibility for devising a formal and effective pattern for providing information, expert advice, and consultation to the Food and Drug Administration.

Assessing the problems of communication among biomedical scientists.—The National Institutes of Health is sponsor of a project, now in progress, to identify the groups which use biomedical information, their needs for information, and their present methods of getting and using information. The project involves the joint efforts of the Federation of American Societies for Experimental Biology, the Institute for Advancement of Medical Communication, and the National Academy of Sciences-National Research Council.

This study will assess the extent to which scientists are being hampered in the pursuit of their work by problems of communication and will advise on steps which can be taken in the solution of these problems.

Primary emphasis will be placed on unrestricted channels of information, written or oral, by which the scientist communicates. Consideration will also be given the problems of privileged information, the dissemination of which is restricted for the protection of the investigator (applications for grants, progress reports, and other similar material) or for the protection of national security.

The project is conceived as a staff task force operation developed in cooperation with informal panels of scientists representative of various fields of biomedicine. As staff papers are developed, they will be submitted informally for criticism and elaboration to established committees of the Academy-Research Council and to ad hoc groups of biomedical scientists and of information specialists.

In view of the needs of NIH for early planning and programing, the group will submit working papers and progress reports from time to time. The final, comprehensive report which will emphasize principles and recommendations will be evaluated and approved by a senior advisory committee and should be completed by October 1963.

Automated network for information processing.—New electronic methods for handling information are becoming available. Eventually an electronic nationwide or even international network with central storage of information and local "browsing" and retrieval may speed and improve the flow of information.

Recently the Public Health Service has consulted a number of experts to get their opinions concerning the possibility of a range of projects and proposals for nonconventional information systems. The information now being collected includes detailed comments from experts about many aspects of an automated information system, including its feasibility, the length of time which would be required to make it operative, the present existence of necessary "hardware" and "software," further development of components which would be required, cost estimates, and alternate proposals which would accomplish the same purposes as an automated system more feasibly or efficiently or at lesser expense.

Information about research grants.—The Public Health Service has been giving special attention to the distribution of information developed as a result of research grants.

Until recently, components of the Service followed individual and differing policies on whether they sent information regarding research grants to the Science Information Exchange. Newly established policy requires all components to submit such information. The National Institutes of Health has followed this practice for some time. Other bureaus are in the process of working out systems of reporting that will be compatible with other information collecting and reporting operations already in effect. By the middle of the year a complete reporting system for all bureaus to the Science Information Exchange should be in effect.

Additional new programs.—The Bureau of State Services (environmental health) has completed preliminary plans for establishing a scientific data processing storage and retrieval system for improved extramural grants management and to facilitate scientific communication in environmental health. The plan is now being implemented as a pilot operation starting with the data process for extramural research and training grants in the environmental health sciences. As experience is gained, the system will be expanded in the environmental health sciences area and its potential and applicability will be made known to the categorical programs for use in connection with their intramural and extramural activities. The system will probably be expanded and used for improved overall bureau management.

In developing the system, attention was given to increasing its usefulness by making it flexible and compatible with other known scientific information systems. As programed now, it will be possible to include information from other Federal agencies, such as the Science Information Exchange, National Aeronautics and Space Administration, and the Armed Services Technical Information Agency. These organizations have already agreed informally to furnish us scientific information which can be incorporated into the bureau system.

The Bureau of State Services has plans for developing further the activities of its Medical Audiovisual Branch at the Communicable Disease Center and for expansion of continuing education for health practitioners.

Several proposals for substantial public information projects are under consideration by the Public Health Service. Some are long standing, having waited authorization and funding for their implementation. Others, developed more recently by the Office of Information and Publications in association with the bureau information officers, are illustrative of possible new departures or major new activities.

Among these proposals are short inexpensive filmed progress reports, a yearbook of health, symposiums for science writers, and programs for science writers and editors.

The Surgeon General's Conference on Health Communications.—During the spring of 1962 the Surgeon General, addressing the House Appropriations Committee, stated the interest which the Public Health Service has in health communications and announced that the Service intended to convene a working conference on health communications before the end of the year.

In June 1962 the Office of the Surgeon General began an intensive review of the communication activities of each component of the Service and gathered recommendations for improving communication activities from a number of sources.

Since solutions to urgent communication problems would call for the combined effort of many people, the Surgeon General invited representatives of the broad interests involved in improving the Nation's health to meet with staff members of the Public Health Service most intimately concerned in handling health information to confer on ways the Public Health Service might help achieve greater use of health and medical information.

The working sessions, November 5–8, 1962.—The conference was held in Warrenton, Va., for 4 days, November 5 through 8, 1962.

The participants included 39 special consultants from all parts of the country with staff members of the Public Health Service serving primarily as resource personnel.

The conference opened November 5 with a general session consisting of reports from the major Bureaus of the Service and addresses by Dr. Jerome Wiesner, special assistant to the President for science and technology, and by Dr. Alan T. Waterman, Director of the National Science Foundation.

Four panels, to which consultants were assigned, met concurrently the following 2 days, with their chairmen reporting to the plenary session on the final morning of the conference.

For working convenience each panel concentrated on a specific subdivision of communication:

Panel 1—communication among scientists
Panel 2—communication to practitioners
Panel 3—communication to the public
Panel 4—communications research

The Public Health Service now has the detailed reports from each of these panels as well as comments and recommendations from many of the participants submitted after the conference.

The recommendations of the conference.—The full conference report will be available in printed form by the end of February and will be distributed widely to interested agencies and individuals. The major recommendations of the conference as developed by the chairmen of the four panels are presented here. These recommendations provide a valuable source of ideas regarding Public Health Service activity and are being given consideration by the personnel and committees having responsibilities for science information activity in the Public Health Service.

CONCLUSIONS OF THE CONFERENCE

Nature of the problem

There was general argreement among those attending the conference that serious problems exist in the communication of scientific information. There was unanimous agreement that the solution to these problems will require continuing attention and call for vigorous action by the many elements of our society who are concerned.

As funds for biomedical research have continued to expand, the numbers of research workers have increased with a corresponding, steady enlargement in the amount of information being produced. The total body of knowledge, which has doubled over the past 20 years, continues to grow greater, more complex, and more difficult to manage. Our expanding population—the ultimate users of scientific knowledge—provides an ever-widening audience for health information.

We are, in short, confronted with an "information explosion."

The members of the conference affirmed the existence of this explosion and the need, repeatedly pointed out during the past several years as a result of other conferences and studies, to move swiftly toward reducing the costly time lag between a scientific discovery and its practical application.

Many new techniques of communication now exist, which are not being fully used. Inadequate financial support, shortages of trained personnel, and insufficient awareness of the existence of these means and facilities are among the reasons they are not being utilized. Proper employment of these new means could, for example, reduce duplication of scientific research efforts and speed the flow of scientific knowledge to physicians and others who have the job of applying it to the needs of people. Furthermore, responsible agencies frequently have failed to support to the fullest possible extent already existing means of communicating health knowledge.

Responsibilities of the Public Health Service

The Public Health Service, as the principal civilian health agency of the Federal Government, is a major force in improving the health of the Nation. This is its basic mission.

The mission involves many goals: to help raise the standards of medical service, to encourage young people to enter careers in the health sciences, to promote improvement of education in the health sciences, to foster understanding of the philosophy, methods, and accomplishments of medical research, and to provide information necessary for a wise determination of national health policies.

The application of health knowledge is fundamental to the accomplishment of both the Service's basic mission and its related goals, and the application of health knowledge obviously involves communications.

With this in mind the members of the conference repeatedly emphasized the responsibility for leadership by the Public Health Service in improving the communication of the results of scientific research.

Variety of audiences

For purposes of working convenience, the members of the conference were divided into four groups to consider: (1) communication among scientists themselves, (2) communication from scientists to health practitioners, (3) communication from scientists and health practitioners to the public, and (4) the kinds of research applicable to the communication process itself.

These subdivisions are not ideal or mutually exclusive. They recognize, however, a fundamental principle: that the organization and processing of knowledge must always take into account the intended recipient.

The members of the conference emphasized that information about the results of research must be directed to the public as well as to scientists and health practitioners.

The general public consists of a variety of groups, with different aims and levels of understanding. For any scientific specialty the "public," for example, includes scientists outside that specialty. Different levels of sophistication and techniques of communication are appropriate for different groups.

Health communication is, moreover, a two-way process. The Public Health Service not only transmits health information to users but must, by receiving information, remain aware of the characteristics and needs of the users.

It is an important and continuing responsibility of the Public Health Service to make information available to all audiences.

Communication and education

The primary purpose of all medical research is to bring about improvements which will benefit the health of the individual.

Success in this endeavor often depends on changing people's behavior, attitudes, and knowledge, which is accomplished not just by distributing information but by a deliberate teaching-learning effort.

The members of the conference felt that the term "communication," in its conventional meaning, was too narrow to cover the aspects of education which were of concern to them. Communication and education were considered to be elements of one process.

The members of the conference emphasized the responsibility of the Public Health Service to support research in the theory and techniques of education as well as research in communication per se.

The need for continuing education of all those engaged in providing health services is indeed real. The characteristics of education in the health field are sufficiently unique that the Public Health Service, as the primary civilian agency in the health field, has a responsibility to encourage and support continuing education for the several health professions.

International aspects

While the emphasis of the discussions at the conference was on the responsibilities of the Public Health Service, and more generally on the problems in the United States, it is clear that many of the recommendations have international implications.

It is important, in accordance with the basic policy of our country, to cooperate with other countries in health matters. One of the most important things the United States can export, particularly to developing countries, is health information. In turn, the United States can benefit, as will others, from worldwide interchange of health information.

Short- and long-range goals

In planning the total program of health communications, both short- and long-range goals should be identified.

For example, Public Health Service support of libraries as they are now operated is considered necessary. At the same time, research and development should be encouraged. This may result in establishing information centers and bring about radical changes in library functions. While new ways of presenting research results are being investigated, support for conventional primary and secondary publications should continue.

Meeting immediate needs should not detract from research programs and pilot projects to develop new methods to improve communication. A balanced attack on all fronts is needed to achieve maximum progress.

Evaluation

The conferees repeatedly stressed the need to evaluate very carefully the effects of all communication efforts.

They felt that evaluation should be built into the planning and development of communication activities and should be inherent in all programs. The recommendation was made specific by one group at the conference which suggested that no less than 10 percent of the budget for a communication project be designated for evaluation of the effectiveness of the project.

Recommendations

The proposals which follow were selected by the chairmen of the four panels as the major recommendations made by the conference participants. Additional suggestions and more detailed counsel are in the panel reports, in the notes of the panel recorders, and in the tapes of the panel sessions and the general meetings.

The Conference on Health Communications recommends that the Public Health Service:

1. Appoint a continuing Committee on Health Communications, advisory to the Surgeon General, to study research and programing, to recommend specific action programs, to prepare periodic evaluations, and to advise on future policy direction.

Those attending the Conference on Health Communications were able to give only preliminary consideration to the problems of communication in the health sciences and proposals for dealing with them. The conferees recognized the value of the Service of a continuing close advisory relationship.

2. Establish within its own organization a focus concerned with health communication.

It is imperative that there be exchange of information and cooperation among Bureaus of the Public Health Service and between the Public Health Service and other agencies, both Government and non-Government, in communication programs.

A focus for communication activity within the Public Health Service can coordinate programs, furnish leadership and direction in developing new activities, and contribute in many other ways to improving communication.

3. Expand existing Public Health Service programs of continuing education for health practitioners.

A meaningful program to insure those in the health services the means to maintain a high level of professional competence and comprehension is essential.

It is with this perspective of the communication problem that the Public Health Service should direct efforts within its own organization on behalf of continuing education for health practitioners.

4. Support programs of continuing education in appropriate educational institutions, health agencies, and professional societies.

Programs of continuing education for professional people employed in the health services are conducted by many agencies.

Support of continuing education in the form of technical assistance and grants to schools, health agencies, and professional societies would be an important contribution of the Public Health Service to improved communication.

5. Support research centers for studies of health communication and education.

Research centers should be located in institutions which have been carefully selected because of their expert and specialized staffs of investigators, their interest and activities which are related to communication and education, and their resources for training multidisciplinary personnel.

6. Stress the interdependence of the human and the mechanical aspects of communication in all appropriate efforts, including research.

In planning communication research programs greater emphasis should be placed on the advances in communications theory and in the behavioral sciences.

7. Support research on methods of evaluating communications activity.

Proper evaluation of communications is unusually difficult. Better methods are badly needed.

8. Support applied research, including pilot operations, as well as basic research in health communications.

The results of research on communication must be translated into action programs.

9. Apply to all research the important general principle that disseminating the results of research to potential users is an integral part of the total research effort.

Each component of the Public Health Service should be held responsible for disseminating the results of its own research programs.

10. Establish science information evaluation systems to satisfy urgent needs for specific information.

Precise, comprehensive, and up-to-date information pertinent to the current research activities of individual scientists is not readily available from existing sources.

Science information evaluation systems should be initiated which would satisfy these needs by selecting precise information from large bodies of knowledge.

As in all endeavors, caution must be exercised against adopting too hastily any large-scale information operations which have been inadequately planned.

11. Support pilot studies of the problems involved in collecting health data.

Pilot studies are suggested as prerequisite to establishing a register of medical case histories. Independent studies can provide consideration of alternate methods of setting up a register.

Adequate safeguards for the privacy of the individual were emphasized as important in any register of medical case histories. Such a register could be a valuable source of information for health studies.

12. Support efforts on behalf of more effective international communication of research results.

Methods of improving international communication which should be considered include:

> Make selected translations available through cooperation between the Government and research groups;
>
> Support abstracting, indexing, and preparing critical reviews, in cooperation with appropriate national and international agencies;
>
> Gather and disseminate internationally information on health programs.

Language differences in biomedical data throughout the world constitute an obvious barrier to communication. Therefore a uniform machine language is needed for processing, storing, and retrieving data from information systems. The Public Health Service should be aware of this problem and support any efforts to cope with it that appear feasible and appropriate.

The Public Health Service should not become involved in research on machine translations at the present time in view of existing programs which are already heavily supported.

13. Support research and development directed toward establishing a coordinated network for automated biomedical information processing.

The vast amount of biomedical communication which needs to be carried out in the future can probably be facilitated by the radically new electronic means for information processing, storing, and retrieval now being developed. Eventually a coordinated network with central storage and local "browsing" and retrieval may relieve the increasing pressure on libraries and speed the flow of needed information to scientists, practitioners, health administrators, and the public.

It is urged that steps be taken to determine whether such a system is feasible and practical, and if so, to implement it.

14. Take the urgent action necessary to establish a worldwide drug information system.

Cooperation by all groups, governmental and nongovernmental, concerned with drug information will be essential for a successful program.

15. Support studies of technical library facilities and operations.

The library of tomorrow should be planned as a communications center rather than merely a repository for books.

Departure from the narrow and traditional view of technical libraries should lead to having in the modern library communication aids such as films, tape recordings, video tapes, programed learning courses, and the equipment and services necessary to exploit newer means of communication and education.

16. Take the leadership in developing technical libraries as a communications resource.

The Public Health Service should give technical libraries support for their present activities and make funds available as they can experiment and broaden their role in meeting the needs of users, including scientists, health practitioners, health educators, and science writers.

The Service is urged to assist libraries to acquire sufficient space to make their acquisitions more usable, and to meet operating expenses for building and servicing their collections, for cataloging, and for personnel services.

17. Support recruitment and training of communications personnel.

Communicating involves a range of skills and a diversity of professions including teachers, health and medical practitioners, writers and editors, psychologists, health educators, research workers, librarians, computer technicians, and programers.

It is evident that the demand for individuals with proper qualifications far exceeds the supply. The fullest cooperation between the Public Health Service and all related agencies will be necessary to train a greater number of people for the work that needs to be done.

18. Improve the techniques used in organizing professional society meetings, conferences, symposiums, small workshops, and other types of face-to-face communication.

Scientists find that attending scientific meetings and visiting the laboratories of other scientists are valuable ways to exchange scientific information.

Unfortunately, the information that is imparted at meetings, whether of a few individuals or of a group, often reaches too limited an audience. Ways should be found to improve the organization and transmission of this kind of information.

Better preparation and more careful distribution of conference proceedings could enhance greatly the usefulness of the conference record.

19. Support primary and secondary publications.

Primary and secondary publications are the framework for most written communication concerning science and health. Support for starting new journals or for expanding the journals already being published is desirable if not given indiscriminately.

Coordinating the work of secondary publications is desirable as is support for the abstracting and indexing that is done by the secondary publications.

20. Encourage a greater number of critical reviews of high quality.

Critical reviews contribute in a very direct way to the effectiveness of scientists and practitioners by making clear the extent of progress that has been made in a field of study.

Critical reviews of high quality are much too rare. Study of outstanding critical reviews should aid in identifying the characteristics which make them exceptional and the circumstances which led to their preparation. This kind of information would be useful in devising new ways to obtain a greater number of critical reviews of high quality.

Programs of financial support for people of proved ability, both within and outside the Federal Government, to prepare critical reviews would be desirable and useful.

21. Make better use of audiovisual media and techniques.

Films, filmstrips, video tapes, and other audiovisual devices should be given wider distribution geographically and presented to a greater variety of audiences than is being done at present.

More imaginative use of audiovisual media will require greater activity than occurs at present in cataloging, distributing, evaluating, and producing audiovisual aids.

Units within the Public Health Service can use audiovisual aids effectively in reporting on their own research. Audiovisual aids also can be used effectively in the education programs of the Service.

22. Use more fully and selectively the mass media in transmitting information about health and provide increased support for the agencies within the Service engaged primarily with providing information to these media.

The so-called mass media—newspapers, magazines, radio, television—represent the mainstream of communication in our society, whatever the subject matter. Although news of science and medicine already receive wide coverage, comprehensive reports "in depth" employing a variety of the media would be highly useful in communicating science and related information to scientists, health practitioners, and the public. It should be remembered that scientists, physicians, and health administrators not infrequently become informed about research findings through news and television reports and are part of the "general public."

Methods of reaching the public include textbooks, exhibits, libraries, schools and museums, and the growing field of educational television.

As with other means of communication, research on the effectiveness of these media is recommended.

23. Establish a special committee to advise, counsel, and guide the Public Health Service in the discharge of its information responsibilities as they relate to the mass media and other aspects of communication to the public.

The Public Health Service, through its information and publications offices, is a continuing source of information to scientists, physicians, and the public. Such a committee could provide useful support and guidance to these offices in their work.

SUMMARY

The year which has passed since the Public Health Service last reported to this subcommittee has been an encouraging one for science information.

During the year an administrative structure has been devised and initial staff assignments have been made to affix responsibility for unified and effective handling of science communication activities in the Public Health Service.

A thorough study of communication programs within the Public Health Service has revealed the variety and quality of existing programs and has identified activities which need strengthening.

The survey itself has acted as a stimulus to communication activity and as an incentive for planning improvements.

The great variation in categories of activity identified by different governmental agencies as communications suggests the urgent need for better definition of what activities constitute a communications program. This is now being done within the Service.

The Surgeon General's Conference on Health Communications was helpful in concentrating diverse efforts of the Bureaus and the National Library of Medicine in a coordinated attempt to arrive at recommendations for action on communication. It was a helpful opportunity for staff people most closely involved in science information programs of the Service to take time from their usual work to examine the direction in which their programs are going.

From the consultants at the Conference came much helpful guidance, including specific recommendations. From the work of many Public Health Service staff members in preparing for the Conference came additional recommendations, plus a new awareness of the importance of science communication.

Excellent beginnings have been made. The prospects for continued progress appear favorable. The continuing challenge will be to sustain a pace commensurate with the urgency of the problems involved.

APPENDIX

PUBLIC HEALTH SERVICE INFORMATION PROGRAMS 1962

One approach to the Public Health Service's many information activities—for comprehension of the programs which are now in operation—is by way of the Service's organization chart. (See next page.)

Each major component of the Public Health Service was asked to describe its current information operations. Those reports are summarized below.

OFFICE OF THE SURGEON GENERAL

The Office of Information and Publications in the Office of the Surgeon Genearal is responsible for general direction of the Service's total information and publications program.

In addition to staff services for the Surgeon Genearal—counsel on his statutory responsibilities for the dissemination of health information, speech materials, and public statements—the Office is the focal point of liaison with the Department and the Bureau information offices in information and publications. It clears press releases, exhibits, motion pictures, slides, films, pamphlets, and similar materials. Although clearance authority for scientific and technical publications has been delegated to the Bureaus, the Office postaudits all single-issue manuscripts in the Service and gives continuous policy direction.

The Office has three branches: Public Information and Publications, Public Inquiries, and Public Health Reports.

Some notion of the scope of its activity is contained in the statistics in a report to the Surgeon General for December–April 1962—cleared were 30 articles, papers, speeches for Service personnel other than the Surgeon General, the White House, and the Department of Health, Education, and Welfare; 137 new publications; 126 press releases; 8 exhibits of publications at professional meetings; handled were 28,000 inquiries, either answered directly by the Public Inquiries Branch or referred to specialists for reply.

Although the Office, with its relatively small staff, devotes most of its time to reporting on the agency's programs under the principle of accountability to the public, it is deeply involved in the broad field of scientific communications. Many scientific advances are made public through the press release mechanism to the general media and to science writers and scientific publications. Public Health Reports, the Service's official journal, of high standing in the profession, goes to 12,000 subscribers, most of them professional workers in health and medicine.

The Public Inquiries Branch distributes 100 separate pamphlets and hundreds of other technical publications. The 100,000 inquiries to which it responded last year were from hundreds of medical groups, professional schools, and individual physicians and scientists. The Public Information and Publications Branch, in addition to clearing manuscripts and exhibits, many of them technical in nature, helps prepare and distribute to scientific audiences such articles as the Surgeon General's reports on oral polio, and smoking and lung cancer.

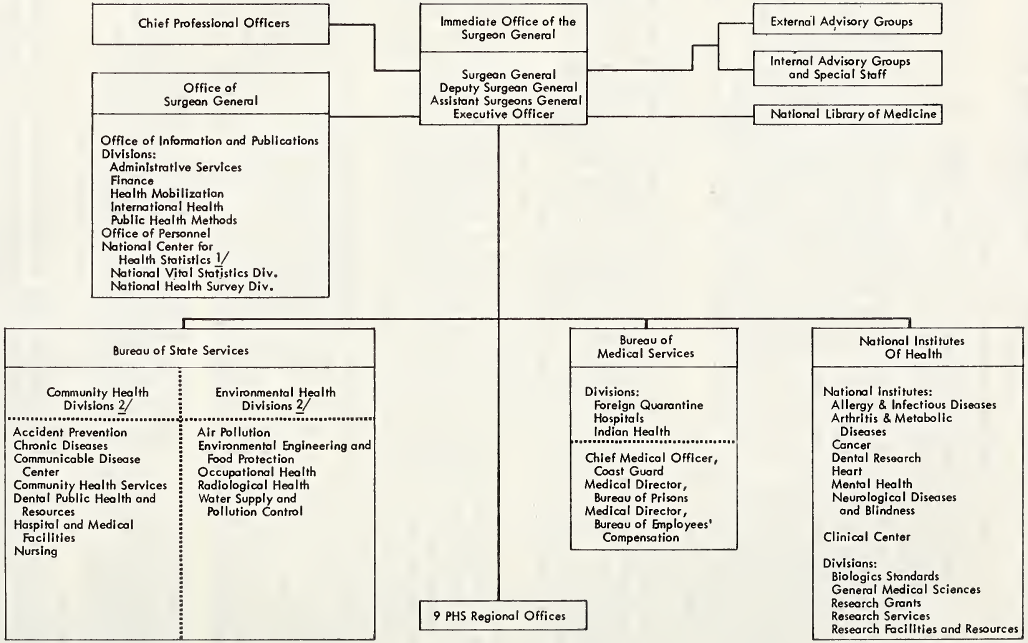
The Office of Information and Publications has always played a part in scientific communications. Limitations in personnel and the consequent necessity for delegation and diffusion of responsibility in a rapidly growing agency, and the lack of clear-cut authority have continued, however, to keep that effort at a relatively low level.

The regional offices

The nine regional offices of the Public Health Service answer to the Surgeon General's office. Each region is staffed by a regional health director and by representatives from the 12 divisions of the Bureau of State Services, the National Institute of Mental Health, and the Office of the Surgeon General. A function of each of the representatives is to bring to State health departments, and through them to county and municipal health departments and the many public and voluntary groups concerned with health, current information on health.

This communication channel works both ways, from local health personnel back to the central offices of the Service, via county health departments, State health departments, and the regional offices.

PUBLIC HEALTH SERVICE - 1962


Chief Professional Officers
Immediate Office of the Surgeon General
Surgeon General
Deputy Surgeon General
Assistant Surgeons General
Executive Officer
External Advisory Groups
Internal Advisory Groups and Special Staff
National Library of Medicine
Office of Surgeon General
Office of Information and Publications
Divisions:
Administrative Services
Finance
Health Mobilization
International Health
Public Health Methods
Office of Personnel
National Center for Health Statistics 1/
National Vital Statistics Div.
National Health Survey Div.
Bureau of State Services
Community Health Divisions 2/
Accident Prevention
Chronic Diseases
Communicable Disease Center
Community Health Services
Dental Public Health and Resources
Hospital and Medical Facilities
Nursing
Environmental Health Divisions 2/
Air Pollution
Environmental Engineering and Food Protection
Occupational Health
Radiological Health
Water Supply and Pollution Control
9 PHS Regional Offices
Bureau of Medical Services
Divisions:
Foreign Quarantine
Hospitals
Indian Health
Chief Medical Officer, Coast Guard
Medical Director, Bureau of Prisons
Medical Director, Bureau of Employees' Compensation
National Institutes Of Health
National Institutes:
Allergy & Infectious Diseases
Arthritis & Metabolic Diseases
Cancer
Dental Research
Heart
Mental Health
Neurological Diseases and Blindness
Clinical Center
Divisions:
Biologics Standards
General Medical Sciences
Research Grants
Research Services
Research Facilities and Resources

July 1, 1962

PHS-OSG-MPAS

[1] Separate organizational status similar to the National Library of Medicine is proposed under the reorganization plan.

[2] These groupings would become bureaus under the reorganization plan.

Division of administrative services

The Division of Administrative Services is responsible for printing and duplicating, for distributing Public Health Service printed materials, for liaison with the Government Printing Office and other printing sources.

Office of Personnel

The Office of Personnel has important communications responsibilities, but most of them are internal and administrative. Its audience is composed primarily of staff members of the Public Health Service. Much material prepared by the Office of Personnel, however, is also directed to the general medical and scientific community, primarily for recruitment. It goes to professional groups through their specialized journals, through professional meetings, and through teaching institutions. The Office also publishes and distributes the Surgeon General's Bulletin.

Division of Health Mobilization

This Division was established in 1959, to study the medical and health needs of the Nation in time of emergency and to develop operational programs to meet these needs. The Division has staff members in the regional offices, in the Office of Civil Defense regional offices, and in many State offices. The Division has established appropriate working relations on a number of regional and State levels.

Its scientific information activities include training courses for doctors, nurses, dentists, hospital administrators, and related professional personnel; research projects on what Americans need to know to survive a national disaster and how to convey that knowledge most effectively; guides to help communities develop their own civil defense health plans; training manuals and other training aids and activities; conferences; speeches; medical self-help training program; MEND (medical education for national defense); and programs for setting up civil defense emergency hospitals and placing them into simulated operation.

The Division of Health Mobilization depends for its success on communication with practitioners and with the public and its programs have aimed at this objective.

Division of International Health

The Division arranges for Service participation and official U.S. representation in international health organizations; gives guidance to the Department of State on international health matters; gives technical advice to the International Cooperation Administration; arranges visits of foreign scientists to this country and of American scientists to other nations; has developed studies of health conditions and resources in 26 foreign countries; prepares and staffs exhibits on U.S. health and medicine for international display; and arranges for circulation of technical publications of international health organizations to interested groups in the United States.

During 1961 the Division distributed on request more than 7,500 publications of the World Health Organization, Pan-American Health Organization, and South Pacific Commission on a complimentary basis throughout this country.

National Center for Health Statistics

The Center was established in August 1960 to bring together the major components of Public Health Service competence in measuring the Nation's health status. The Center's activities are designed to stimulate optimal use of technical and methodological innovations in collecting, processing, and analyzing health statistics; and, associating closely the collecting, analyzing, interpreting, and disseminating of health and vital data, to foster improvement of health intelligence programs.

The Center contains two Divisions—the National Health Survey Division and the National Vital Statistics Division. In addition the Center includes an Office of Electronic Systems and an Office of Health Statistics Analysis.

Office of Electronic Systems: Established about a year ago, this Office provides computer equipment and services, keeps abreast of advances in electronic systems techniques and develops improvements in electronic data processing methods, helps in programing and provides consultation and technical assistance, including training courses, within the Center and for other public health programs.

Office of Health Statistics Analysis: Constituted during the spring of 1961, this Office studies and interprets health and vital statistics to assess the health status of the population and works with indexes of health, disease classification, and technical developments in the field of vital and health statistics.

National Health Survey Division: The U.S. National Health Survey comprises a group of continuing studies to show the extent of illness and disability in the population, the amounts and types of services received for illness or impairment, and the economic and other impacts of such conditions. The Survey is specifically charged with development of new and improved methods in the area of health statistics.

National Vital Statistics Division: This Division collects, tabulates, analyzes, and publishes the official U.S. vital statistics of births, deaths, marriages, and divorces from transcripts of these vital records furnished by the States. Biomedical research studies are carried on based on vital records and followup surveys from vital records together with other source data. In addition, the Division has a continuing program for improving the quality and usefulness of vital statistics through research studies and through technical assistance to producers and consumers of vital and health statistics. The scope of technical assistance and professional training activities extends from the local to the international level with primary emphasis on State health departments.

NATIONAL LIBRARY OF MEDICINE

The National Library of Medicine is concerned primarily with making more readily available to research workers the results of past research, mainly by providing both physical and bibliographic access to the literature of medicine.

Physical access involves universal acquisitions programs and the provision of interlibrary loans. The Library's photoduplication program is a chief instrument in the interlibrary loan area. In fiscal year 1962 the Library responded to over 125,000 requests for interlibrary loans, with an average timelag of 3 days. More than 108,000 of these requests were filled by providing photoduplicates of the requested material. Through this mechanism, some 2,000 libraries around the world received 2,244,000 pages of material. One in eight of these "loans" went to libraries overseas.

The Library's Index Medicus is the most important single apparatus for research scientists searching for previous publications in their field of interest. In fiscal year 1962 the Library indexed over 150,000 medical articles. The Index Medicus appears monthly with a print order of 7,500 copies. Approximately 900 copies are distributed free to Federal medical installations; another 900 are used for exchange purposes; the balance are subscribed to through the Superintendent of Documents.

By agreement, the 12 month cumulation of the Index Medicus is published by the American Medical Association, where since 1960 it has replaced the Quarterly Cumulative Index Medicus.

Through a systematic publication program of bibliographies and catalogs, the Library provides bibliographic access to the medical literature for other libraries and search centers. Thus its catalog provides an annual international record of all monographic publication in the medical sciences; its Bibliography of Medical Reviews an annual record of the critical review literature.

The Library conducts a science translation program which is concerned with improving international communication of research literature. Using both dollar and foreign currency appropriations, it has supported the translation and publication of monographic contributions, abstracts from the Soviet medical literature, and review papers, and is currently supporting the publication overseas in English of nine foreign research journals.

The Library's MEDLARS (medical literature analysis and retrieval system) was contracted for during 1962 and will go into operation in the fall of 1963.

At the heart of MEDLARS will be a digital computer. Information will be fed into the system through punched paper tape, representing the indexing of each article done by the Library staff at an average depth of 10 headings. This information will be converted to magnetic tape and manipulated in the computer to activate a high-speed composing device capable of producing photographic masters for printing. MEDLARS will provide (1) high-speed composition of the Index Medicus, (2) recurring bibliographic listing of references selected in accordance with the predetermined requirements of particular research fields (an example might be a weekly listing of the world's medical literature on cardiovascular disease), and (3) search and retrieval capacity to answer queries from individual research installations concerning published information bearing on their immediate problems, providing the inquiries with a list of references.

In its first year of operation MEDLARS will contain 180,000 references. This will increase by annual increments to the point where over a million references will be stored on magnetic tape for searching.

MEDLARS will turn out 50 recurring bibliographies of varying periodicity and will accept up to 90 complex demand search questions daily.

BUREAU OF STATE SERVICES

This Bureau of the Service serves as the administrative focus for the application of health knowledge gained through the research arm and for the external efforts of the Service to work with State and other health departments and many outside organizations in manifold methods of controlling disease.

The variety of the Bureau's efforts are seen through the titles of its operating divisions; in the community health area are the Communicable Disease Center, the Divisions of Hospital and Medical Facilities, Nursing, Dental Public Health and Resources, Accident Prevention, Community Health Services, and Chronic Diseases, with its branches concerned with cancer control, heart disease control, diabetes and arthritis, neurological and sensory diseases, and long-term illness.

In the area of environmental health, the Bureau has divisions devoted to work in air pollution, water pollution, radiological health, occupational health, Alaska health research, milk and food and general sanitation, and the Sanitary Engineering Center for research in Cincinnati, Ohio.

Each of these divisions, cognizant that the success of its control objectives in the health departments, health organizations, and among medical men in all parts of the Nation depends in great measure on promoting the use of knowledge among these groups, has as one of its primary activities the packaging and distribution of technical information.

The key to the Bureau's scientific information program is the wide variety of methods, techniques, and channels by which it seeks the objective of maximum use of available knowledge. Following, then, is a listing of sample activities, all aimed at communication.

1. To assist hospital planners, more than 200 different technical publications on all phases of hospital construction and operation have been written, and as many as 200,000 copies distributed in a year, by the Division of Hospital and Medical Facilities.

2. Three-day courses in new information on radiation and other hazards were staged for 200 uranium mine and mill operators and monitors in three locations in the West; later 10,000 copies of a new booklet with similar educational material were distributed to mineworkers.

3. A weeklong course in the health aspects of radiation principles was attended by more than 1,000 Government officials, representatives of industry and private agencies, and foreign students during the year 1961.

4. To assist in putting into general practice current knowledge on rheumatic fever prevention and similar heart disease control procedures, 112 medical and health professional were assigned to State health departments for extended duty at the local level.

5. In other short courses, the Communicable Disease Center training program had 373 different training courses at different locations in the United States during 1961 and they were attended by more than 6,000 persons, primarily technicians and other professional personnel from State and local health departments.

6. A new experimental device called "Shoptalk," consisting of filmed and recorded conversations between four or five cancer specialists and general practitioners on practical programs of cancer control, was produced and shown to many medical society meetings in various parts of the States where the specialists and general practitioners lived.

7. When a new threat of epidemic influenza was impending, the Communicable Disease Center put into pamphlet form the information concerning diagnosis, treatment, and vaccination needed for specified susceptible groups of persons and distributed 40,000 copies of the publication to health officers and physicians. This was followed by having a pharmaceutical company distribute the identical booklet to another 250,000 physicians.

8. When a new pamphlet for the public portraying the problems and needs of locating unknown diabetics was published by an outside organization, the diabetes program, Division of Chronic Diseases, purchased and distributed several thousand copies.

9. When a major new piece of legislation, the Community Health Services and Facilities Act of 1961, was passed, authorizing project grants by the service to many local private and public organizations to improve out-of-hospital services for the chronically ill and aged, all officials of the Division of Chronic Diseases participated in explaining the workings of the new act. More than two dozen speeches were made and up to 1,000 copies of these speeches were distributed to prospective applicants.

10. The Division of Accident Prevention financed a 20-week course of accident prevention for public health workers at the Center for Safety Education in New York City. All people trained are now working in State and local programs to create and coordinate new programs.

All programs of the Bureau engage to some extent in almost all of these kinds of activity, in addition to seminars, press conferences, radio and film projects, special institutes, personal visits to physicians, the pubilcation of special newsletters, and of course, the provision of many articles on Bureau work for medical and professional journals. The one common denominator of all these activities is that the constant aim is the spreading and using of knowledge that will be helpful in controlling disease.

National medical audiovisual facility

The national medical audiovisual facility, which is a primary audiovisual center for the Public Health Service, is located in Atlanta, Ga., in a million-dollar building, part of the Communicable Disease Center, specifically designed an equipped to produce audiovisuals. It has two large stages, three stories high, a 35-mm. and 16-mm. motion picture processing laboratory, a sound department, an animation department, and an art department, motion picture editing facilities, and nine photographic darkrooms for both black and white and color stills.

Of the 75 persons employed at the facility, half are associated with the development, production, and distribution of motion pictures. At present half of the workload is from contracts with health and medical programs outside the Communicable Disease Center, such as the National Institutes of Health, the Department of Agriculture, and the Atomic Energy Commission. The facility also produces filmstrips and stills and aids in the development and preparation of health exhibits.

The facility has a stock of some 4,700 motion picture prints and 3,100 filmstrip prints. The National Archives of Medical Motion Pictures, which originated in 1953 at the National Library of Medicine, were transferred to this facility in January 1962. Last year 50,822 film showings were given to an estimated audience of 2,185,647. The still photographic repository contains about 60,000 photographs and slides in various sizes, black and white, and color.

The "Public Health Service Film Catalog," listing all motion pictures and filmstrips carried in the Library, is published each year. An interagency group, the Advisory Council on Medical Training Aids, sponsors a yearly listing of 2,000 film titles useful in the training programs of the member agencies. This catalog, "Film Reference Guide for Medicine and Allied Sciences," formerly produced by the National Library of Medicine is now prepared by the facility.

BUREAU OF MEDICAL SERVICES

The hospitals, clinics, health centers, and other health services operated by the Bureau of Medical Services are in 250 locations here and abroad. About 13,000 employees are engaged in activities that provide direct health services to a variety of Federal beneficiaries. The function of the Bureau of Medical Services is primarily direct service in contrast to the Bureau of State Services which depends for its effectiveness on programs operated through other agencies.

Information functions are included in the Bureau program as a whole and in the programs of its three Divisions: the Division of Hospitals, the Division of Indian Health, and the Division of Foreign Quarantine.

The Bureau Information Office helps professional personnel in the Bureau write and publish articles, holds press conferences, produces radio programs, produces and distributes tape recordings, prepares press releases, prepares exhibits and filmstrips, publishes a newsletter for employees and staff. The office clears all types of information material originating in the Bureau.

The Division of Hospitals maintains information exchange channels with other Public Health Service programs, especially with some of the National Institutes of Health, has emphasized production and distribution of tape recordings, and produces publications, articles, releases, and exhibits. Other channels of information dissemination include discussions, conferences, committee memberships, interns and residents in the hospitals of the Division, and visitors to the facilities of the Division.

The Division of Indian Health must maintain effective communication with its first public, the Indians, for success in its program. Much of this communication is person to person. There is also appropriate use of pamphlets, reports, journal articles, slides, press releases, and conferences.

The Division of Foreign Quarantine is the correspondence channel between the World Health Organization and the Public Health Service on the control of the spread of disease between nations. It works through publications, articles, press briefings and releases, communications with scientists, practitioners, the World Health Organization, quarantine services of other nations, and the travel industry.

NATIONAL INSTITUTES OF HEALTH

In range, diversity, and magnitude, NIH activities in biomedical communications represent a considerable effort. NIH is involved to a significant degree in each of the major communications areas (scientist-to-scientist, scientist-to-practitioner, and scientist-to-public), communications as well as in research in communications per se.

NIH's present activities in communications do not have a specific statutory basis (statutory assignments to NIH in the area of communications are explicit only in the categorical areas of cancer, heart, dental, and mental health research), but derive from and are subordinate to the primary NIH mission for the conduct and support of biomedical research: NIH adheres to the principle that the research process is completed only when research findings have been added formally to existing stores of knowledge, or have been communicated to meet some need or purpose.

Scientist-to-scientist communications

NIH supports approximately half of the biomedical research conducted in the United States. Approximately 1 out of 11 U.S. scientists engaged full time in biomedical research will be found on the intramural staff of NIH. It follows, therefore, that among PHS bureaus, NIH has predominant responsibility for improved communications among scientific members of the biomedical community. NIH shares responsibilities for this area of communications with the Bureau of State Services (which supports research in environmental health), and with the National Library of Medicine (which logically has functional responsibility for the library process).

Intramurally, each of the categorical institutes encourages scientific personnel to publish freely in their field of medical research. During fiscal year 1962, more than 1,600 research papers originating at NIH were published in professional journals, conference reports and proceedings, or as contributions to books. All institutes facilitate person-to-person interchange among intramural staff and scientists outside NIH, through conference sponsorship and through liberal support for travel by NIH scientists. The NIH Library (a branch of the Division of Research Services) provides central and satellite library services including reference assistance, photocopying and oral and written translations. A Medical Arts and Photography Branch (also a part of the Division of Research Services) constructs scientific exhibits and provides clinical illustrations, charts, slides, photographs, and motion picture service. The Clinical Center, with its 500 beds and many research laboratories, provides an environment conducive to interchange of information across the boundaries of many different categories and disciplines.

NIH units with specific scientific communications functions include: Scientific Information Unit, Psychopharmacology Service Center, National Institute of Mental Health, and Research Communications Branch, Cancer Chemotherapy National Service Center, National Cancer Institute. (Both of the above with information collection, abstracting, translating, publication, and distribution activities); Mental Health Clearing House, National Institute of Mental Health (with full spectrum of communications activities projected for initiation in late fiscal year 1963 or in fiscal year 1964).

The complex of the Division of Research Grants Study Sections (45 in all) with their personnel drawn from leaders of the biomedical community across the country, provides a most effective forum for scientist-to-scientist interchange in which many intramural scientists participate. The person-to-person exchange made possible by the meetings of these study sections, the apparatus of the site visit, the functioning of review committees and special advisory groups, now numbering more than 100, of training committees and the Boards of Scientific Counselors institutionalize a communications device whereby the totality of NIH supported research is reviewed by the scientists actively participating in these programs.

Collaborative projects (such as the perinatal project of the National Institute of Neurological Diseases and Blindness and programed chemotherapy grants of the National Cancer Institute), also merit singling out in a report on communications because of the systematic and intense exchange of information which takes place concurrently with the research as derivative or byproduct.

In the extramural area, the basic mechanism by which NIH interacts with biomedical scientists is through the support of research and training. NIH provides grant support for a full spectrum of activities designed to facilitate communications among biomedical scientists. These activities may be summarized as (1) support for the personal interchange process (provision of travel funds for grantee scientists, conference and symposia support, etc.), (2) publications support (primary and secondary publications, including translation of pertinent materials), (3) support for the library process (including research in data storage and retrieval systems), (4) support for the training and education process, and (5) support of research in communications per se. Various NIH programs have created foci of competence in information areas such as scientific film production, medical television, and computer technology. These centers of competence can serve as a resource for the institutes and servicewide information programs.

Almost 16,000 individual scientists receive either full-time or part-time support through the fellowships and training programs of the NIH; communication is an integral part of the professional activities of each of these.

Scientist-to-practitioner communications

In the broad area of communicating research findings to the practicing health community so that the Nation may enjoy improved health, NIH defers to the major functional and program interests of the Bureau of State Services. In this area, the major NIH responsibility is for identification and development of research findings for immediate clinical application. NIH impact on problems of scientist-to-practitioner communications derives mainly through NIH funding of three special programs, which in fiscal year 1962 had a dollar value of $38 million. Those programs are: State control programs, community demonstration programs, and professional and technical assistance programs. With one exception, these programs (while funded by NIH), are carried out by BSS. For the one exception—the mental health program—collaboration between NIMH and BSS has been the rule.

Scientist-to-public communications

The important communication function of presenting to the public the results of NIH research and research training programs is carried out by the information offices of the institutes and Divisions. In addition to a news service for professional journals, which reaches 1.25 million readers monthly, the NIH information offices publish the NIH Record, with a circulation every 2 weeks of over 11,000, and produced, during the 6-month period January–June, 1962: 174 news releases; 49 major reports; 38 radio, TV, and film programs; presented 36 exhibits; answered over 8,000 inquiries, and was responsible for assistance to writers and editors which resulted in 246 column inches in national magazines.

A related and important communication function carried on by Institute and Division Information Offices of NIH is the preparation each week of a report summarizing briefly individual research findings by NIH staff and grantee scientists, and program developments. These reports, primarily directed to the Surgeon General, are secondarily distributed each week to a wide audience of scientists and scientist-administrators within NIH-PHS and to the Senate and House committees concerned with NIH-PHS-DHEW appropriations. In addition, the information offices and Divisions prepare for the appropriations hearings, at the request of the Congress, special reports and statements on research and program accomplishments and results. For fiscal year 1963 hearings, these totaled 50. These reports, as well as opening statements in preparation of which information offices assist, also reach a wide audience of both scientists and general public, since they are published by the Congress and are quoted by both scientific and lay press.

THURSDAY, FEBRUARY 28, 1963.

BUILDINGS AND FACILITIES

WITNESSES

DONALD F. SIMPSON, EXECUTIVE OFFICER
VERNON M. HERRING, COORDINATOR OF CONSTRUCTION
DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
GORDON E. McCALLUM, CHIEF, DIVISION OF WATER SUPPLY AND POLLUTION CONTROL
DR. A. B. COLYAR, CHIEF, ARCTIC HEALTH RESEARCH CENTER
DR. ALAN W. DONALDSON, DEPUTY CHIEF, COMMUNICABLE DISEASE CENTER
DR. JAMES A. SHANNON, DIRECTOR, NATIONAL INSTITUTES OF HEALTH
RICHARD L. SEGGEL, EXECUTIVE OFFICER, NATIONAL INSTITUTES OF HEALTH
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES M. QUIGLEY, ASSISTANT SECRETARY
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

BUILDINGS AND FACILITIES

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
	PUBLIC HEALTH SERVICE			
25	Other services	1,189	350	4,000
26	Supplies and materials	28		
31	Equipment	142	1,200	3,000
	Total, Public Health Service	1,359	1,550	7,000
	ALLOCATION TO GENERAL SERVICES ADMINISTRATION			
21	Travel and transportation of persons		5	10
24	Printing and reproduction		65	85
25	Other services	811	1,000	5,100
32	Lands and structures		17,852	20,961
	Total, General Services Administration	811	18,922	26,156
	Total obligations	2,171	20,472	33,156

Program and financing

[In thousands of dollars]

	Costs to this appropriation					Analysis of 1964 financing			
	Total estimate	To June 30, 1961	1962 actual	1963 estimate	1964 estimate	Deduct selected resources and unobligated balance, start of year	Add selected resources and unobligated balance, end of year	Appropriation required for 1964	Appropriation required to complete
Program by activities:									
1. Environmental Health Center (1st phase)	34,370	--------	--------	--------	1,500	785	2,046	2,761	30,824
2. Water pollution control laboratories	19,061	--------	1	1,825	2,000	5,974	10,264	6,290	4,971
3. Arctic Health Research Center	5,000	--------	--------	--------	300	--------	200	500	4,500
4. Extension to Clinical Center cafeteria, NIH	695	--------	--------	--------	50	335	645	360	--------
5. Library relocation, NIH	900	--------	--------	--------	300	--------	600	900	--------
6. Warehouse extension, building 13, NIH	780	--------	--------	--------	100	--------	680	780	--------
7. Construction, mental health-neurology-cancer cafeteria, NIH	800	--------	--------	--------	200	--------	600	800	--------
8. Repairs and improvements:									
(*a*) Bureau of State Services	415	--------	--------	--------	415	--------	--------	415	--------
(*b*) National Institutes of Health	1,966	--------	--------	--------	1,966	--------	--------	1,966	--------
9. Construction of biologics standards laboratory annex, NIH	4,656	--------	--------	130	650	226	3,876	4,300	--------

10. Research facilities construction and site acquisition (animal farm, NIH)	13,404	199	44	3,100	1,000	1,977	977		8,084
11. Construction of laboratory facilities, Puerto Rico (NIH)	850			60	115	790	675		
12. General office building extension, NIH	7,700			130	420	570	150		7,000
13. Construction of master utilities extension, NIH	5,645			344	1,000	5,151	4,151		150
14. Communicable Disease Center	16,000	18	180	2,840	6,000	12,762	6,762		200
15. Construction of cancer research facility, NIH	10,280				1,000	10,280	9,280		
16. Construction of service building, NIH (building 12)	1,800			100	800	1,700	900		
17. Water quality standards research laboratories	4,000			150	931	3,850	2,919		
18. Construction of research facilities, Lexington, Ky., NIH	400	2	20	302	76	76			
19. Construction of library facilities	6,850	4,369	1,743	273	215	465	250		
20. Construction of surgical facilities, NIH	2,183	1,712	144	227	100	100			
21. General office building, NIH	9,825	7,603	1,459	363	100	400	300		
22. Construction of animal quarters, NIH	2,606	1,372	652	502	80	80			
23. Middle America Research Unit housing (NIH)	400		300	100					
24. Construction of dental research building, NIH	3,631	3,492	63	76					
25. Biologics Standards Laboratory, NIH	3,494	3,486	8						
Total program costs, funded	157,711	22,253	4,614	10,522	19,318	45,521	45,275	19,072	55,729
Change in selected resources [1]			−2,443	9,950	13,838				
Total obligations			2,171	20,472	33,156				
Financing:									
Unobligated balance brought forward (−)			−5,027	−21,086	−33,814				
Unobligated balance carried forward			21,086	33,814	19,730				
New obligational authority (appropriation)			18,230	33,200	19,072				

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[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $4,202,000; (1962 adjustments, −$2,000); 1962, $1,757,000; 1963, $11,707,000; 1964, $25,545,000.

CONSTRUCTION OF MENTAL HEALTH-NEUROLOGY RESEARCH FACILITY

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
ALLOCATION TO GENERAL SERVICES ADMINISTRATION			
21 Travel and transportation of persons		1	1
24 Printing and reproduction	1	5	10
25 Other services	405	256	156
32 Lands and structures			9,000
Total obligations	406	262	9,167

CONSTRUCTION OF MENTAL HEALTH-NEUROLOGY RESEARCH FACILITY

Program and financing

[In thousands of dollars]

	Costs to this appropriation					Analysis of 1964 financing			
	Total estimate	To June 30, 1961	1962 actual	1963 estimate	1964 estimate	Deduct selected resources and unobligated balance, start of year	Add selected resources and unobligated balance, end of year	Appropriation required, 1964	Appropriation required to complete
Program by activities:									
1. Planning, design, supervision	921	11	11	210	689	689			
2. Construction	11, 218				6, 645	11, 218	4, 573		
Total program costs, funded	12, 139	11	11	210	7, 334	11, 907	4, 573		
Change in selected resources [1]			395	52	1, 833				
Total obligations			406	262	9, 167				
Financing:									
Unobligated balance brought forward (−)			−12, 128	−11, 722	−11, 460				
Unobligated balance carried forward			11, 722	11, 460	2, 293				
New obligational authority									

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[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, none; 1962, $395,000; 1963, $447,000; 1964, $2,280,000.

Mr. FOGARTY. We now have the buildings and facilities budget. Who is requesting to testify on this request?

Mr. SIMPSON. I am, sir.

Mr. FOGARTY. Go ahead.

GENERAL STATEMENT

Mr. SIMPSON. Mr. Chairman and members of the committee, I have a statement which I believe has been filed with the clerk which we need not bother to read. I have in addition a brief summary statement. If you wish, sir, we would be glad to read it for the record.

Mr. FOGARTY. We will put the other more complete statement into the record.

(The statement follows:)

BUILDINGS AND FACILITIES

Mr. Chairman and members of the committee: The appropriation "Buildings and facilities" finances a number of the major construction projects of the Public Health Service. The appropriation for 1963 provided funds to be used in connection with these activities: construction of three water pollution control laboratories; construction of two water quality standards laboratories; planning for the biologics standards laboratory annex; equipment for the renovation of facilities at the Communicable Disease Center; construction of a cancer research building; extension and renovation of the service building at the National Institutes of Health; construction of facilities at the NIH animal farm; extension of utilities at NIH; and construction of laboratories in Puerto Rico for the National Institute of Neurological Diseases and Blindness.

The 1964 estimate totals $19,072,000, and is to finance the following nine items:

NATIONAL CENTER FOR ENVIRONMENTAL HEALTH ($2,761,000)

During the last session of Congress this item was presented before the Subcommittee on Deficiencies. Members of that subcommittee expressed dissatisfaction with the proposal to build the center in the Washington area, and their report recommended that the estimate be a part of the regular 1964 budget submission to this committee.

The request is for site acquisition and planning for a national center for environmental health to provide facilities for our national programs of water supply and pollution control, radiation protection, air pollution control, milk and food sanitation, and occupational and other environmental health hazards. It would provide facilities also for broadly based fundamental research into the toxicological, epidemiological, and physiological aspects of contaminants in the environment. This research is of common interest and value to all of our environmental health programs.

The recent widespread expressions of concern over pesticides, radioactive fallout, and other contaminants in the environment re-raises serious questions concerning the relationship between our present and future chemical, physical, and biological environment and the health of our citizens. Illustrations of the dramatic effect on health of small amounts of substances whose action is not fully understood are coming to the attention of the public with increasing frequency. Their concern and ours is with the lack of knowledge of the health significance of ingesting, inhaling, or otherwise being exposed to these substances, in small dosages over longer periods of time. A major national effort must be mounted if growing environmental health problems are to be adequately understood and controlled.

The proposed center will house a coordinated program of research which will enable us to understand better the action and significance of environmental contaminants and forces on human health, to develop preventive or corrective measures, and to develop and disseminate methods for rapid, safe and effective application of control measures. The center will serve also as a focus for training programs, for the provision of technical assistance, and for Federal regulatory and enforcement programs in the fields of environmental health. The close relationships among research, development, demonstration, application, training, control, and enforcement activities are especially important in the environmental health field.

All of the environmental health advisory groups to the Public Health Service have recommended a substantially increased effort in the existing environmental health programs—air, water, food, radiological health, environmental engineering ,occupational health, and the basic sciences essential to the support of these, both intramurally and extramurally. Among the reports of these advisory groups was a special report submitted to the House Subcommittee on Appropriations by the Surgeon General in January 1960. This report was the basis for our proposal for an environmental health center.

More recently this proposal was reviewed by the Committee on Environmental Health Problems, established at the request of the Burau of the Budget and the President's Science Adviser. This Committee was chaired by Dr. Paul M. Gross, currently president of the American Association for the Advancement of Science.

The report states, "To implement effectively the development of a focal point within the U.S. Public Health Service for an enhanced and a major national effort in environmental health, the Committee recommends the establishment of a Center for Environmental Health * * *." It recommends that, "* * * the Environmental Health Center including the Office of Environmental Health Sciences be located in the Washington area."

An independent review of this proposal has been made by a special panel of scientists convened by the President's Science Adviser. It has the endorsement of both this group and the Science Adviser. The provision of a Washington facility will offer major advantages in carrying forward in a unified manner, responsibility on environmental health hazards, appropriately relating activities of the Public Health Service to the interests of other departments and agencies.

The President in his health message of February 7, 1963, said "I also ask that the Congress approve the funds requested in my 1964 budget for initial steps to establish a central facility in the Washington area which can serve as a focal point for related research, training, and technical assistance in environmental health."

The center should be located in the Washington area. This is the focal point for Federal scientific activities, including the location of the national research forum, the National Academy of Sciences. It is the center of information on the biological and physical sciences, including grant programs of other Federal agencies such as the Department of Defense, Atomic Energy Commission, National Aeronautics and Space Administration, and the National Science Foundation. Washington is also the center of the Public Health Service grant programs and for the entire extramural program in the health sciences. It is the operating and administrative location of the Public Health Service advisory councils, study sections, and personnel planning and managing extramural programs. It is the place where institutions and agencies turn for information on science programs.

A most important reason for a Washington location is the need to be close to the other Federal agencies with whom our environmental health programs must deal frequently, not only in the policy level, but also at the programing and operating level. Research on environmental health involves a close interchange and relationship with such agencies as the National Bureau of Standards, Atomic Energy Commission, Department of Agriculture, and Department of Commerce; and, within Health, Education, and Welfare, the National Institutes of Health, the National Health Survey, National Office of Vital Statistics, and other components of the Department such as the Food and Drug Administration.

This estimate of $2,761,000 together with the $785,000 previously appropriated, will make available a total of $3,546,000. Of this amount $1,320,000 is required for the acquisition of a site and $2,226,000 is required for plans, specifications, survey, and supervision.

WATER POLLUTION CONTROL LABORATORIES ($6,290,000)

The 1961 Federal Water Pollution Control Act Amendments provided for establishment of water pollution control laboratories. At least seven were specified—one each in regions of the Nation designated as: Northeast, Middle Atlantic, Southeast, Midwest, Southwest, Northwest, and the State of Alaska. These laboratories are needed because—

(1) Water pollution control field activities require readily accessible, substantial, and highly technical laboratory support. These activities include

development of comprehensive programs for water pollution control, enforcement of pollution abatement, collection of basic data, and technical assistance to State agencies.

(2) Certain regions have a high incidence of special pollution problems whose ultimate solution requires long-term, on-site research; and

(3) Each region has especially important needs to protect particular uses of water (fisheries, recreation, industry, etc.), or offers unusual opportunities to develop, through research and demonstrations, specialized water pollution control techniques that can be used in other regions where similar uses of water exist or are growing.

For example, in the Northwest region there is a present and growing need to protect commercial and sport fishing and recreational uses of water supplies. There are also widespread problems in the control of water pollution caused by lumbering and the pulp and paper industries. In the Southwest, where pollution already is limiting the supply of water for many users, oil well and natural flows of brines and the return flows of irrigation water are difficult and characteristic control problems.

Planning funds were appropriated for the seven laboratories in 1962, and in 1963 construction funds were appropriated for the laboratories at Ada, Okla., Corvallis, Oreg., and Athens, Ga.

This request includes $5 million for construction and portable equipment for the laboratories to be located in Boston, Mass., and Fairbanks, Alaska.

The original cost estimates for the Ada and Corvallis laboratories were based on construction costs current at the time the 1963 budget was first prepared. Since that time bids received by the General Services Administration have been 12 to 28 percent higher than previous GSA estimates. The increased costs for these laboratories, based upon current cost estimates, is $720,000 above the original estimate and this amount is included in the 1964 request. Included also is $270,000 for the increase in construction cost of the laboratory at Athens, Ga.

The 1963 appropriation did not include funds for portable equipment for the Ada and Corvallis laboratories, and $300,000 is requested in 1964 for this equipment.

ARCTIC HEALTH RESEARCH CENTER ($500,000)

This item is to provide funds for the planning of an Arctic Health Research Center in Fairbanks, Alaska. Larger and more suitable quarters must be obtained for the research laboratories and the animal housing required by the environmental health programs if increasing responsibilities are to be met. The leased quarters of the present Arctic Health Research Center in Anchorage are crowded, inefficient, and hazardous for fire and contagion. While they constitute a monument to ingenuity, they are restrictive to the scientific staff.

The objective is to provide adequate facilities for the growing Public Health Service environmental health programs which have responsibilities in Alaska. It is vitally necessary to attract well qualified scientists to this area to undertake health research. Great benefits should accrue from close association of Public Health Service and university research and teaching activities in such fields as radiological health; host-parasite relationships, including potential disease vectors and their control; engineering for the development of arctic sanitary facilities and services; physiology; the psychology of human accommodations to the colder environments; and the economics of resources development in arctic areas.

This is the right time to plan a move to the University of Alaska campus because the university is undertaking to build a group of science facilities of which Federal institutions will be an important component and with which the Arctic Health Research Center can cooperate. A State bond issue approved last November will provide funds for the first biosciences building which will include the new Zoophysiology Laboratory and headquarters for the Institutes of Marine Science and of Arctic Biological Research. Now under construction is a Forestry Research Laboratory and projected is an enlarged building for the Geophysics Institute. The Arctic Health Research Center and the proposed regional water pollution control laboratory as part of this scientific community will be of mutual value to the State university and to other Federal agencies, and to the benefit of all northern residents.

It is planned to construct both the Arctic Health Research Center and the Alaskan Regional Water Pollution Control Laboratory on a single site in the area where the University of Alaska will construct its group of scientific research facilities. The university has agreed to donate the required site to the Government.

Plans for the Arctic Health Research Center will be designed to permit maximum coordination with the research activities being planned by the University of Alaska, and more specifically to provide the most effective joint technical and administrative supporting facilities for the Center and the Water Laboratory. The Public Health Service is now engaged in the development of the program and space requirements of the Arctic Health Research Center, and therefore we are unable to make precise recommendations on the size and cost of the facility.

CLINICAL CENTER CAFETERIA ($360,000)

In 1961, $335,000 was appropriated for the extension of the Clinical Center cafeteria facilities. Design work on this project was delayed in order to evaluate better the effect of changes in the management of patient and employee food facilities.

Of the approximately 3,500 employees in the Clinical Center building, the average customers at a noon meal total about 1,500 or 43 percent. One of the factors which reduces the number of employees using this facility is the lack of sufficient seating capacity.

The $360,000 requested in 1964, together with the 1961 appropriation of $335,000, would provide for increasing the seating capacity and separating patient food preparation from employee facilities. It would also enable the employee food service to be operated by an outside concessionaire such as Government Services, Inc., leaving the specialized preparation of patient diets the sole concern of the Clinical Center dietetic department.

The project would increase the seating capacity and serving area from the 10,000 gross square feet of the present cafeteria (500 seats) to 15,000 gross square feet (860 seats). It will also provide a new food preparation facility, 10,000 gross square feet in area, which would include a kitchen, dishwashing, storage, receiving, office and locker facilities—all separate from the existing food preparation areas. The total estimate for this project, including all planning and construction costs, is $695,000.

RELOCATION OF NIH LIBRARY ($900,000)

The present NIH library space is inadequate to house the necessary collection, staff and scientific personnel using these facilities. The proposed relocation is essential to the objective of making these facilities adequate for the current research program as well as the needs of new research buildings now being designed. This relocation will provide space required for study cubicles, reading and reference areas, and additional stacks.

The principal factors which strongly indicate the need for a relocation of the library are the following:

Location.—The heavy traffic area to the NIH library requires a ground floor location which is central to all library users. The present location, on the fifth floor of the Clinical Center, is particularly inconvenient to all patrons outside of the Clinical Center building.

Configuration.—The existing space is long and narrow and subdivided into three separate areas with numerous uncontrolled entrances and exits. The library occupies space originally designed for scientific laboratories and relocation of the library will release 66 modules of laboratory space for research purposes.

Adequacy of space.—The present space consists of 18,000 square feet which supports a collection of 85,000 volumes and reading area for staff members and patrons. The relocated facility will consist of 37,000 square feet and will support a collection of over 100,000 volumes, with area for staff services, reading and seminar rooms.

Efficiency of operations.—One of the most critical factors affecting the library is the efficiency of operation. Since the design of the present space is not compatible with library needs, it is impossible to group resources together satisfactorily. The public and staff are often required to move over much greater distances than they would in a facility designed for the specific purpose. It has been estimated that waste motion on the part of the staff and patrons is 20 to 25 percent.

The proposal would move the library to the west of the Clinical Center auditorium, in a location convenient to personnel in both the Clinical Center and the surrounding research buildings. The total estimate for this project including all planning and construction costs is $900,000.

WAREHOUSE EXTENSION, NIH ($780,000)

The National Institutes of Health have approximately 37,220 gross square feet available in Building 13 for warehousing operations. Recently, an additional 28,000 square feet of warehouse space has been rented in a location several miles from the Bethesda reservation and it is neither adequate nor convenient for NIH supply needs.

In 1953, the central storeroom issued 65,000 line items. In 1962, with nearly 4 times the number of personnel employed at NIH in 1953, 266,000 line items were issued. The increase in supply demand has overtaxed the present facilities, making it difficult to meet service requirements for research programs. This problem could be greatly alleviated with more adequate space, centrally located on the NIH reservation.

This project proposes the addition of a fourth floor to Building 13. This would provide an additional 43,000 gross square feet for warehousing purposes. The estimated cost, including both design and construction, is $780,000.

MENTAL HEALTH-NEUROLOGY-CANCER CAFETERIA ($800,000)

The need for an additional cafeteria facility in the vicinity of the Cancer-Mental Health-Neurology Buildings complex was perceived in the master plot plan prepared in 1958. This plan forecast an expansion of laboratory facilities and personnel into the southwest quadrant of the reservation. As the NIH research program increased in size and scope and the total population approached 9,000, it was deemed advisable to have a reservation-wide food service survey conducted. Survey reports prepared by two firms indicated a need to serve the occupants of the existing Biologics Standards Building and the Dental Research Building as well as the planned Cancer and Mental Health-Neurology Buildings. The expected population of these 4 buildings is approximately 2,000, of which it is estimated 75 percent would utilize this proposed cafeteria.

The site selected for the proposed facility is in the area between the Cancer Building and the Mental Health-Neurology Building. This is accessible by pedestrian traffic from the Biologics Standards and Dental Buildings. The total area is estimated at 21,000 square feet and the total estimated cost, including both design and construction, is $800,000.

BIOLOGICS STANDARDS LABORATORY ANNEX ($4,300,000)

During the 6 years since construction of the first building for the Division of Biologics Standards was authorized in 1956, the Division's program has increased approximately 350 percent. As of July 1, 1962, 196 establishment licenses and 1,230 product licenses were in effect, the latter covering 288 specific biological products. Tests ranging from relatively simple sterility tests to complex and costly potency determinations and safety tests are now carried out annually on more than 5,000 individual lots of a wide variety of biological products. With the rapidity with which new and improved products are being developed, the development and distribution of standard physical reference preparations has become a major operation with 73 such preparations now being maintained and approximately 4,000 vials being distributed annually. For each new and improved product it is necessary that the Division mount programs designed to identify problems as they relate to vaccine safety and to develop adequate test procedures to insure the continued safety, purity, and potency of these products. Examples of such products which may be expected in the immediate future are measles vaccine and a large group of vaccines for respiratory disease. In the more remote future, vaccine can be expected against such infectious diseases as hepatitis. The Division has found it necessary to constantly expand its research, testing, and control efforts in order to minimize delay in determining whether such new and improved products meet the standards for safety, purity, and potency, since by doing so it facilitates the availability of satisfactory products at the earliest possible date.

The increasingly rapid transition from laboratory findings to end products, particularly in the area of virology, has put a severe strain on the Division's present space resources. During 1962 these resources were severely taxed by this growing workload and it was possible to meet these increased demands only by curtailing work on projects of lower priority and by postponing investigations in other areas. It is now apparent that these increased demands and responsibilities are representative of the new era in biologics control and are not of a temporary nature which can continue to be met by resorting to emergency measures. The workload of the Division can be expected to grow and the additional facilities are requested in order to enable the Division to continue to meet and discharge successfully its statutory responsibilities.

This structure will provide a contiguous annex to the present Biologics Standards Building which will approximately double the space currently available. It is anticipated that this multistoried addition will provide a total net usable space of approximately 41,000 square feet. Provision will be made for additional rooms for experimental animals and both general purpose and specialized laboratories in which the complex testing procedures and supportive research on the control of biological products can be carried out. Adjacent to these areas will be space for supporting services in the form of constant temperature rooms, sterile rooms, autoclave and preparation rooms, as well as a few offices for senior scientific personnel. Special low temperature storage facilities will also be housed in the annex.

The total estimated cost of this bulding is $4,656,000, of which $356,000 is currently available.

REPAIRS AND IMPROVEMENTS ($2,381,000)

The estimate of $2,381,000 contemplates the inauguration of a continuing program for major repairs, alterations, and improvements required to maintain buildings and facilities of the Service (except those of the Bureau of Medical Services). Funds for this purpose have heretofore been included in appropriations to the General Services Administration. Included in the estimate are items totaling $415,000 for the Bureau of State Services and $1,966,000 for the National Institutes of Health.

Most of the projects of the Bureau of State Services are for facilities of the Communicable Disease Center. These include (*a*) $185,000 for structural and equipment repairs at 1600 Clifton Road, (*b*) $20,000 for increasing the electrical distribution system and other smaller items at Chamblee, (*c*) $161,000 for painting, remodeling, and equipment replacement and repairs at Savannah, and (*d*) $20,000 for wiring, painting, and some structural repairs at Puerto Rico. There is also included $29,000 for the purchase and installation of a standby boiler and an emergency generator at the Sanitary Engineering Center.

Projects for the National Institutes of Health include (*a*) $500,000 for the installation of five exit stairwells in four buildings, (*b*) $300,000 for improving the air conditioning and ventilation systems in the Cancer Research Building, (*c*) $180,000 for installing standby electrical service for the operating rooms and other critical areas in the Clinical Center, (*d*) $100,000 for elimination of hazards in the incinerator plant, (*e*) $173,000 for automation of portions of the pneumatic tube system, (*f*) $353,000 for improvements and repairs to roads, sidewalks, and entrances, (*g*) $190,000 for installation of air conditioning at the Middle America Research Unit in the Canal Zone, and (*h*) $170,000 for other projects, including the modification of boilers, and the improvement and repair of elevators in two buildings.

Thus our estimate for 1964 encompasses a number of diverse projects in support of important Public Health Service programs. I shall be glad to attempt to answer any questions that the committee may ask. Mr. Herring, our coordinator of construction, is here with me. The directors of the programs involved in these projects—Dr. Anderson, Dr. Shannon, and Dr. Goddard—are also here and will furnish such information on program requirements as you desire.

Mr. Fogarty. Go ahead.

BREAKDOWN OF 1964 REQUEST

Mr. Simpson. Mr. Chairman and members of the committee, the appropriation "Buildings and facilities" finances a number of the major construction projects of the Public Health Service. The estimate of $19,072,000 for 1964 is to provide funds for the following nine items:

Acquisition of a site and preparation of plans for the National Center for Environmental Health, $2,761,000;

Construction and equipping of water pollution control laboratories, $6,290,000;

Planning for the construction of a new Arctic Health Research Center, $500,000;

Extension of the cafeteria at the Clinical Center, $360,000;

Relocation of the library of the National Institutes of Health, $900,000;

Extension of the warehouse at the National Institutes of Health, $780,000;

Construction of a cafeteria building at Bethesda to serve occupants of the Mental Health-Neurology Building, the Cancer Building, the Biologics Standards Building, and the Dental Building, $800,000;

Construction of an annex to the Biologics Standards Laboratory, $4,300,000; and

Repairs and improvements for facilities of the Bureau of State Services and the National Institutes of Health, $2,381,000.

ENVIRONMENTAL HEALTH CENTER

The first item—site acquisition and planning for a National Environmental Health Center—was presented last year before the Subcommittee on Deficiences. The committee report recommended that the request be deferred for study and consideration by this committee in connection with our regular budget. The proper location of the proposed center has been the subject of extensive study by many advisory groups. As Dr. Terry mentioned in his statement, the consensus of these groups, including the President's Science Advisory Committee and Committee on Environmental Health Problems, is for a facility located in the Washington area. The President has accepted these recommendations and specifically proposes a Washington area location in his health message.

The director of each program involved in these construction projects is here to furnish such additional information as the committee may desire. Dr. Robert Anderson will speak to the first project—the Environmental Health Center.

Mr. Fogarty. All right, Doctor.

Dr. Anderson. Possibly I should start, Mr. Chairman and members of the committee, by summarizing three pertinent conclusions of these various study groups that have been mentioned by Dr. Terry and Mr. Simpson.

The first conclusion is that the environment is changing so rapidly because of urbanization, population growth, industrialization, and chemical and scientific technology that there must be increasing attention to the environment and its effect upon health and the welfare of man.

The second conclusion of these groups was that there should be a heightened national program by the Public Health Service enlisting the full participation of other governmental agencies, States, and universities in this effort.

The third conclusion was that other governmental agencies have a major interest in the environment as it affects their primary missions. They regard the environment as a resource in which things are developed. And in order to use the data and information and to plan and operate programs most effectively and economically, the advisory groups recommended to the Public Health Service that there should be close liaison with these other governmental departments for the greatest program effectiveness.

These were the conclusions, then, that have guided us in our program planning. The features of our program planning, too, are important as they relate to the environmental health center.

PLANNED PROGRAMS

There are four that I should like to highlight: the first is that functions that are to be performed in this national program for environmental health and for the control of pollution and the maintenance of a healthful environment are regulation and control, technical assistance, training of people in the associated field, and finally, demonstration and research. And to make the program bear particularly upon the protection of the public, the aim of our planning is to bridge the separation that might occur between these functions that I have mentioned so that research findings appear very shortly in control actions.

The second feature that I should like to mention is that, in order to develop a national research effort in this field, the planning and direction of research are joined with the other functions in our headquarters; currently they are not. Also, provision must be made for central research activities which are basic to the purposes of our programs and support of activities of our field research and demonstration stations and their investigations. Such headquarters research will also stimulate the efforts of other agencies and research institutions in this field.

The third feature in our planning is that, in order to speed the solution of community problems, a major portion of our effort will be operated from appropriately located regional stations where research can be pinpointed toward the solution of the separate local problems of communities in that region. Demonstrations and operational training can be effectively carried out from such regional stations, but the basic planning of these activities in such bases, their coordination, their direction, must be provided from a national focal point or headquarters.

In order to stimulate and engage the talent of other researchers, which is the fourth feature in our planning, we wish to develop a national grants program coordinated with others of the Public Health Service and other governmental agency programs. Thus the resources and talents of educational institutions and control agencies will be used in this endeavor.

It is our conclusion that these objectives and features of our program planning will result in a national program of field station activities backed by a Washington headquarters for the national program. The programs that would be included in this center, of course, are our control divisions, the Division of Water Pollution Control, Division of Air Pollution, Division of Radiological Health, the Division of Environmental Engineering and Food Protection, and the Division of Occupational Health.

The kind of research that would be done in such a national headquarters as we are envisioning, other than the research planning and directing function of field activities, would be the research basic to the entire field of environmental health. This would include studies in human ecology, epidemiology, studies of chemical reactions that might be fundamental to the removal of chemical pollutants from either the air or water; for example, studies designed to detect what the environment is actually composed of; and better, more sensitive techniques of testing for various components in the environment. In addition, certain fundamental principles of control, as I suggested before, need to be explored.

This is a very sketchy presentation, Mr. Chairman, of the work that we would be undertaking at this Center.

INCREASES REQUESTED FOR 1964

Mr. Fogarty. Before I ask you any questions about it, Mr. Simpson, the appropriation for 1963 is $33.2 million, and the request for 1964 is $19,072,000. The facilities provided for in 1963 and included in the request for 1964 are set forth on pages 6, 7, and 8, which we will place in the record.

(The pages referred to follow:)

Buildings and Facilities

Amounts available for obligation

	1963	1964
Appropriation	$33,200,000	$19,072,000
Unobligated balance brought forward	21,085,884	33,814,149
Unobligated balance carried forward	−33,814,149	−19,730,110
Total	20,471,735	33,156,039

Obligations by activities

Description	1963 estimate	1964 estimate	Increase or decrease
Environmental Health Center (1st phase)	0	$3,000,000	+$3,000,000
Water pollution control laboratories	$3,674,000	5,100,000	+1,426,000
Arctic Health Research Center	0	400,000	+400,000
Extension to clinical center cafeteria, NIH	0	100,000	+100,000
Library relocation, NIH	0	300,000	+300,000
Warehouse extension, building 13, NIH	0	150,000	+150,000
Mental health-neurology-cancer cafeteria, NIH	0	640,000	+640,000
Biologics standards laboratory annex, NIH	280,000	2,000,000	+1,720,000
Repairs and improvements:			
(*a*) Bureau of State Services	0	415,000	+415,000
(*b*) National Institutes of Health	0	1,966,000	+1,966,000
Research facilities construction and site acquisition (animal farm, NIH)	4,000,000	900,000	−3,100,000
Laboratory facilities, Puerto Rico (NIH)	75,000	600,000	+525,000
General office building extension, NIH	280,000	420,000	+140,000
Master utilities extension, NIH	370,000	3,900,000	+3,530,000
Communicable Disease Center	9,556,000	4,500,000	−5,056,000
Cancer research facility, NIH	0	4,000,000	+4,000,000
Service building (building 12), NIH	200,000	1,500,000	+1,300,000
Water quality standards research laboratories	286,000	3,200,000	+2,914,000
Research facilities, Lexington, Ky. (NIH)	375,966	0	−375,966
Library facilities	576,000	65,039	−510,961
Surgical facilities, NIH	89,788	0	−89,788
General office building, NIH	442,750	0	−442,750
Animal quarters, NIH	190,725	0	−190,725
Dental research building, NIH	75,506	0	−75,506
Total obligations	20,471,735	33,156,039	+12,684,304

New obligational authority by activity

Description	1963 estimate	1964 estimate	Increase or decrease
Environmental Health Center (1st phase)	0	$2,761,000	+$2,761,000
Water pollution control laboratories	$6,200,000	6,290,000	+90,000
Arctic Health Research Center	9	500,000	+500,000
Extension to Clinical Center cafeteria, NIH	0	360,000	+360,000
Library relocation, NIH	0	900,000	+900,000
Warehouse extension, building 13 (NIH)	0	780,000	+780,000
Mental health-neurology-cancer cafeteria, NIH	0	800 000	+800.000
Biologics standards laboratory annex, NIH	150,000	4,300,000	+4,150,000
Repairs and improvements:			
Bureau of State Services	0	415,000	+415,000
National Institutes of Health	0	1,966,000	+1,966,000
Communicable Disease Center	3,200,000	0	−3,200,000
Cancer research facility, NIH	10,280,000	0	−10,280.000
Service building (building 12) NIH	1.800,000	0	−1,800,000
Water quality standards laboratories	4,000,000	0	−4,000,000
Research facilities construction and site acquisition (animal farm) NIH	2,120,000	0	−2,120,000
Master utilities extension	4,850,000	0	−4.850,000
Laboratory facilities, Puerto Rico	600,000	0	−600,000
Total, new obligational authority	33,200,000	19,072,000	−14,128,000

AUTHORITY FOR CONSTRUCTION PROGRAM

Mr. **Fogarty**. Would you also place in the record the provision of law authorizing the Public Health Service to construct these facilities.

Mr. **Kelly**. We will be glad to.

(The information follows:)

Construction proposed to be financed under the estimate for "Buildings and facilities" is authorized as follows:

Water pollution control laboratories, section 4(e) of the Federal Water Pollution Control Act (33 U.S.C. 466c).

Other projects, section 321(a) of the Public Health Service Act (42 U.S.C. 248a).

LOCATION OF ENVIRONMENTAL HEALTH CENTER

Mr. **Fogarty**. The first item is $2,761,000 for the Environmental Health Center. Where in the Washington area would this be located?

Dr. **Anderson**. We have examined some 50 sites in the Washington area and from these sites now have 3 that have the approval of the National Capital Planning Commission as being ones that they would consider for final determination of the location of the Center. Two of those sites are directly north of the District and one is to the northwest.

In addition to that, Mr. Chairman, we are exploring other possibilities for land in this area.

Mr. **Fogarty**. What experts or group of experts have determined that the Washington area is the best location for this?

Dr. **Anderson**. Our staff studies on this subject have concluded that this is the logical place for the national headquarters. In addition, the Special Committee on Environmental Health Problems, which was convened by the Surgeon General a year and a half ago to study our planning with regard to environmental health programs came to the conclusion that this was the logical site for the activity and this committee report, which we presented to you at the last session of Congress, contained this recommendation.

This recommendation was also reviewed by the President's Science Adviser, and by a special panel of consultants who were to advise the science adviser, and the Bureau of the Budget. It was their final conclusion that the Washington area was the appropriate place, in fact, the only place for the national headquarters for this activity. This has led to the development of this item and its presentation here in the President's budget.

LETTER FROM CONGRESSMEN MATHIAS AND SICKLES

Mr. Fogarty. I have just received a letter dated February 26, signed by Congressman Mathias and Congressman Sickles. I will ask to put this in the record at this point.

(The letter follows:)

Congress of the United States,
House of Representatives,
Washington, D.C., February 26, 1963.

Hon. John Fogarty,
Chairman, Subcommittee on Appropriations, Health, Education, and Welfare Department, House of Representatives, Washington, D.C.

Dear Congressman Fogarty: We earnestly solicit your support and that of your subcommittee handling appropriations for the Health, Education, and Welfare Department, for the provision of funds for site acquisition and planning of the proposed Environmental Health Center, U.S. Public Health Service, in the Washington, D.C., area.

The President's health message of February 7, 1963, renews his recommendation that authorizes the grant to the Surgeon General of the Public Health Service to bring environmental health functions together in one bureau. The President's message further states: "I also ask that the Congress approve the funds requested in my 1964 budget for initial steps to establish a central facility in the Washington area which can serve as a focal point for related research, training, and technical assistance in environmental health." We unanimously support the President's request.

The Department of Health, Education, and Welfare has, after diligent study over a period of years, chosen sites north of the District of Columbia as most ideal for the purposes to be served by the Environmental Health Center. Criteria for the Center's location were developed by a special Surgeon General's committee of scientists and educators. The 1962 report of the Committee on Environmental Health Problems of the Health, Education, and Welfare Department recommended that this Center be located in the Washington area because of the regulatory and operational aspects of the program which require a site contiguous to the many Government agencies which are or will be involved in research on environmental health. This includes the National Institutes of Health, U.S. Bureau of Standards, Atomic Energy Commission, Beltsville Agricultural Research Center, and many other agencies.

Furthermore, the President's Science Advisory Committee reviewed this committee's findings and again concurred in the recommendation for a suburban Washington location as an essential operating function.

Those offices in HEW now at work on environmental health are already making daily contacts with other Washington bureaus—an estimated 800 contacts per week at the present time—even before establishment of the Center. These necessary contacts will be multiplied tenfold in the future, making the operation of the Center from a point removed from these ancillary agencies expensive, cumbersome, and inconvenient.

HEW also wishes to draw on the pool of engineering, scientific, and research talent which is available in this area, now widely noted as a center of science, research, and development activity. Many of the highly skilled and specialized employees of the U.S. Public Health Service, who would be a part of the Center's staff, are now living and working in this area and would experience no hardship in adapting to a new assignment here. The Surgeon General strongly feels, and we as a delegation concur, that the difficulties of attracting the proper scientific and research personnel in a new or more distant location would be extremely difficult if not impossible. The subsequent monumental personnel problem of adequately staffing what will be a vital research arm of the Federal Government makes removal of this facility from the Nation's Capital environs unthinkable and untenable operationally.

The sites under consideration for the Environmental Health Center have been carefully studied, screened and cleared, in accordance with the Presidential directives affecting location of Federal facilities in the National Capital area. Every agency involved, local, State, and Federal, has given its approval to the establishment of this Center in the desired location, so that the letter as well as the spirit of the President's Executive order has been observed.

In view of the urgent need for this facility and in view of the President's restated wishes in the matter of establishing the Environmental Health Center and in the Washington metropolitan area of Maryland, we respectfully urge your subcommittee to approve this item in the current budget for planning and facilities for the Health, Education, and Welfare Department. We pledge our support for this provision and urge its early adoption.

Sincerely,

Carlton R. Sickles
Charles McC. Mathias, Jr.

RECOMMENDATIONS OF VARIOUS GROUPS RELATED TO NEED FOR ENVIRONMENTAL HEALTH CENTER

Mr. Fogarty. Would you please place in the record the pertinent excerpts from the reports or comments of the professional experts who have recommended that this be in the Washington area.

Recommendations Relating to the Proposal for a National Center for Environmental Health

June 19–20, 1958.—The National Advisory Health Council (minutes of meeting, June 19–20, 1958) called attention to the constantly changing pattern of problems in the field of environmental health and recommended that the Public Health Service devote greater resources to research and education in this field in order to provide the necessary leadership in the effective expansion of the total national effort.

[Excerpt]

"National Advisory Health Council, Minutes of Meeting, June 19–20, 1958

"The Council was deeply impressed by the report by the sanitary engineering group. The historical references cited traced the transition of sanitary practices in the United States over the past half century with clear indications of the role of sanitation in the conquest of the common communicable diseases. During and after World War II, the concentration of population and the unprecedented growth of industry substantially increased the amount of traditional contamination in the environment and at the same time introduced new pollutants of increasing complexity and largely undiagnosed health potential. This is especially true in air and water pollution. Synthetic chemicals and byproducts of ionizing radiation accentuates this problem. Projection of present trends in population growth and concentration, together with new and expanding industrial developments, present convincing arguments for more concerted efforts on research and on education of technical personnel to meet the inevitable impacts on man's health and general welfare. It has become very evident that means must be found to evolve a better understanding of the changes that are taking place in our environment and to work out basic and practical methods of modifying their effects.

"While the Council is not prepared at this time to offer specific recommendations on program items, it is the consensus that problems of the environment are undergoing unprecedented changes and that in many respects the subtle effects of these changes are unknown. Pollution and contamination of the air, water, and other aspects of the environment which are directly related to man's health and welfare as well as to food supplies are presently problems of major significance and present trends indicate more serious future conditions.

"The council recommends therefore that, to provide the necessary leadership in the effective expansion of the total national effort, the Public Health Service devote greater resources to research and education in this field."

June 27, 1958.—In its report "The Advancement of Medical Research and Education," a panel of consultants to the Secretary, Department of Health, Education, and Welfare, under the chairmanship of Dr. Stanhope Bayne-Jones, reported the need for additional research on such environmental health problems as radiation injury, harmful chemical processes, accidents, communicable diseases, and increasing air and water pollution.

April 28, 1959.—The Committee on Appropriations of the House of Representatives, in its April 1959 report on the fiscal year 1960 appropriations to the Public Health Service, requested "that the Public Health Service make a thorough study of the environmental health problems and the most efficient organization of our facilities to meet those needs, and have a report prepared for submission to the committee by January 1, 1960, so that the committee may have an opportunity to study it before holding hearings on the 1961 budget."

July 1959.—The Surgeon General asked the National Advisory Health Council to assist in the study. A subcommittee chaired by Dr. Boisfeuillet Jones and supplemented by other consultants as follows, made the study:

Boisfeuillet Jones,[1] Chairman, vice president and administrator of health services, Emory University, Atlanta, Ga.
Herbert R. Domke, M.D., director, Alleghany County Health Department, Pittsburgh, Pa.
Harold B. Gotaas,[1] Sc. D., Technological Institute, Northwestern University, Evanston, Ill.
Roscoe P. Kandle, M.D., State commissioner of health, New Jersey Department of Health, Trenton, N.J.
Louis P. McCabe, Ph. D., president, Resources Research, Inc., Washington, D.C.
Ross A. McFarland, Ph. D., professor of environmental health and safety, School of Public Health, Harvard University, Boston, Mass.
Lemuel C. McGee, M.D., medical director, Hercules Powder Co., Delaware Trust Building, Wilmington, Del.
Malcolm H. Merrill,[1] M.D., director, California State Department of Public Health, Berkeley, Calif.
Russell H. Morgan, M.D., professor of radiology, Johns Hopkins University, Baltimore, Md.
B. A. Poole, director, Bureau of Environmental Sanitation, Indiana State Board of Health, Indianapolis, Ind.

January 18, 1960.—The President's budget for 1961 included a request for $785,000 for the planning of additional environmental health research facilities. The tentative estimate upon which this request was based provided for 250,000 net square feet of research space at an estimated construction cost of $19 million. Cincinnati, Ohio, was tentatively designated as the location for the additional facilities. However, because this estimate was developed prior to the inception of the environmental health study, the justification, as presented to Congress, included the following statement: "Recommendations stemming from the Surgeon General's report on environmental health problems which was requested by the House Appropriations Committee, obviously will be taken in full account in developing plans for the additional facilities."

February 1, 1960.—The Surgeon General's report was submited to the Committee on Appropriations, House of Representatives. The section of this report dealing with facilities is as follows:

[Excerpt]

"ENVIRONMENTAL HEALTH: SURGEON GENERAL'S REPORT TO THE HOUSE COMMITTEE ON APPROPRIATIONS, JANUARY 1960

"FACILITIES

"The needs now foreseen for intramural research, technical assistance, and training in environmental health will require far more extensive facilities than any now available in the Service. Additional facilities should be developed in

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[1] Subcommittee on Environmental Health of the National Advisory Health Council.

conformance with the oiganizational principles which have been outlined. These facilities should probably house a significant segment of the administrative staff of the environmental health organization as well as the research, technical assistance, and training personnel of each operating program. Such facilities would greatly enhance the capability of the Service to fulfill its overall responsibility in environmental health through adequate planning, direction, and coordination of the various parts of the overall program.

"The Public Health Service may also need to equip itself with additional small satellite intramural laboratories to provide technical assistance, conduct monitoring programs, do research on special problems, and, in conjunction with universities, conduct training. Whenever possible, such laboratories should be located in close proximity to universities to foster cooperative activities."

March 8, 1960.—Hearings on the Surgeon General's Report on Environmental Health were held before the subcommittee of the Committee on Appropriations, House of Representatives.

March 1960.—The above report had sufficient implication for future organization of the Public Health Service that the Surgeon General appointed a Study Group on Mission and Organization of the Public Health Service. The final report of the Study Group pointed out the need for a central facility in the Washington area:

[Excerpt]

"FINAL REPORT OF THE STUDY GROUP ON MISSION AND ORGANIZATION OF THE PUBLIC HEALTH SERVICE

"Many of the operations of the new Bureau must be carried out in the field where the problems exist. Hence, the development of various field centers can be anticipated to conduct certain types of research, provide technical assistance to State and local agencies, and bring certain services closer to the consumer.

"However, the major environmental programs of the Public Health Service must be unified and coordinated, if urgent problems are to be dealt with effectively. A strong headquarters staff in the Washington area will be essential for central planning and administration, including maintenance of a highly complex set of relationships between environmental programs of the Service and other governmental programs. Water pollution and radiological problems are outstanding examples of such multiple relationships. Also a central laboratory facility will be needed for research which cannot be done in the field, which cuts across divisional lines and requires interdisciplinary scientific approaches. The Study Group believes strongly that this central facility is a prerequisite if the complicated and extensive problems facing this Bureau are to be met effectively."

March 31, 1960.—A report, "Field Centers and Central Facilities for Environmental Health," also was prepared by the Surgeon General's Study Group on Public Health Service Reorganization. This report, as follows, recommended a central facility in the Washington area:

"FIELD CENTERS AND CENTRAL FACILITIES FOR ENVIRONMENTAL HEALTH

"DISCUSSION AND RECOMMENDATIONS

"In proposing a Bureau of Environmental Health the Study Group recognized the close interrelationship between the major environmental activities, and the need to bring them together in a unified whole. The proposed organization for environmental health provides specific mechanisms for dealing with the total exposure of man to environmental impacts. Specifically, units are provided for the ecology, toxicology, economic, and social organization aspects of environment. Through such means the Study Group sought to insure that the environmental impacts which reach man through the common routes of air, water, food, and occupation could be effectively assessed.

"Overall program considerations, from coordinative planning through execution, are compelling with respect to common central location of the major environmental programs. In research as well as other program activities, common interests and relationships speak strongly for proximity of operation. In addition, a highly complex set of administrative relationships exists between programs of this Bureau and other Government agencies. This requires frequent and close contact with these agencies, especially in Washington. Water pollution and radiological health are outstanding examples in this respect. It is difficult to see how these programs could operate without substantial Washington staffs. Likewise, it is difficult to see how a Bureau of Environmental Health could operate effectively with its major operations at scattered distant locations across the country.

"In research, the need to create a scientific community attractive to high-quality scientists is evident. To accomplish this and to provide close interprofessional relations, a research facility of sufficient size and scope to be professionally attractive is needed. A consolidated research facility can best meet this need. The dispersion of the major programs comprising this Bureau would vitiate major objectives for which the Bureau was created.

"The Study Group believes that the interests of administrative and scientific effectiveness and efficiency would be served best by bringing together on a single campus the major environmental health programs. Such a campus would provide facilities to accommodate:

"(*a*) The Bureau and the headquarters staffs of the respective divisions,
"(*b*) Central research laboratories,
"(*c*) Advanced technical training which cannot be decentralized, and
"(*d*) Some aspects of technical assistance.

"A Washington area location is strongly recommended.

"CENTRAL AND FIELD FACILITIES

"The concept of field centers is not new to the Public Health Service, but lack of uniformity in the use of terms has tended to becloud organizational issues on which the study group wishes to be quite specific. For the purposes of this discussion the following definitions are used:

"*Field centers.*—A field center is a relatively permanent administrative unit outside of headquarters in which two or more independent divisions conduct elements of their programs through the sharing of facilities and other resources.

"*Field station.*—A field station is an administrative unit outside of headquarters which conducts activities for a single division and which is directly responsible to that division.

"*Headquarters.*—Headquarters is the location of the staff responsible for the direction of a particular bureau, division, or branch.

"*Central facility.*—A central facility is the structure(s) which houses the headquarters staff, the more fundamental research operations, and the advanced training activities which cannot be decentralized.

"Under these terms, the present Taft Center is classed as a field center, the Division of Radiological Health Laboratory at Montgomery as a field station, the Communicable Disease Center complex at Atlanta as headquarters for a division, and the National Institutes of Health in Bethesda as a central facility.

"LOCATION OF FIELD CENTERS

"Greatest care must be exercised in selecting locations for field centers to assure that there are compelling scientific or administrative advantages to be gained in a particular location.

"Field centers at various principal locations throughout the country would supplement the central facility. Ultimately major field centers might be expected to develop in various areas to meet specific area problems and to place certain services closer to the consumer.

"Proposals for activities in the field would be reviewed by the Bureau to determine when they should be located at major field centers, when it is necessary to locate them elsewhere, and what relationship should exist between field centers and satellite activities.

"While construction of the central facility for environmental health was proceeding, as many activities as practicable would be decentralized at field locations. When the central facility was completed, such functions as were appropriate for it would be transferred from field locations to it. At such time the Taft Center could become the field center for Central United States.

"FUNCTIONS OF FIELD CENTERS

"Field centers might be organized to perform all or some of the following functions:

"1. Comprehensive planning for control of environmental hazards peculiar to a geographic area.

"2. Basic data collection and analysis.

"3. Laboratory support services and laboratory technical assistance.

"4. Bases of operations for field studies.

"5. Technical training.

"6. Specialized technical assistance, either on a limited geographic basis or on a national basis, depending on the uniqueness of the technical competence represented.

"7. Research.

"ORGANIZATIONAL RELATIONSHIPS OF FIELD CENTERS

"1. *To headquarters.*—Field center activities would be financed by the respective divisions in accordance with the management fund principle. The annual programs of the field center would be developed jointly by the center, the respective divisions, and the Bureau. Responsibility for execution would be placed with the director of the center.

"2. *To regional offices.*—Regional offices would call upon field centers for specialized technical assistance, and would develop appropriate working relationships with the centers for keeping each other informed.

"The study group believes that it is generally preferable to have specialized technical assistance provided from field centers and central laboratories rather than from regional offices. Intimate contact with the work of the centers is necessary to maintain the professional competence of specialized technical consultants.

"3. *To universities.*—Reference has been made in the environmental health report to the desirability of locating field centers in close proximity to university research and teaching centers. While the study group subscribes to this belief, we are convinced that the administrative direction of field centers must clearly rest with the Public Health Service and cannot be delegated to the university. The relationship to the university is primarily an "intellectual one" in which the field centers would be encouraged to develop collaborative projects with the universities and in which the field centers and universities would use their respective technical competencies for mutual support. It is expected that the universities would develop substantial related research operations financed from grants, contracts, and other funds."

April 22, 1960.—Consequent to the above report, a Public Health Service staff paper "Environmental Health Facilities" and supporting tables were submitted to the Department of Health, Education, and Welfare. The paper was in support of a request for amendment of the fiscal year 1961 budget to provide planning and site acquisition money for a proposed "Environmental Health Center." A preliminary master plan was presented which included the following principal elements:

(1) A central facility to be located in the Washington, D.C. metropolitan area to provide the primary interdisciplinary focus on environmental health problems.

(2) A supporting system of field centers or stations to complement the central facility by providing for services such as surveillance, analysis, and direct technical assistance which are appropriate on a decentralized area basis.

The proposed plan was aimed at a 1970 goal of 970,000 additional net square feet of space at an estimated construction cost of $68 million for full development. It was proposed to phase planning and construction over the period fiscal year 1961–68. However, it was proposed to phase a major portion for completion by 1965, because of present needs and rapid continuing growth of environmental health programs.

May 18, 1961.—The President's Science Adviser convened an ad hoc Panel on environmental health to consider the Department of Health, Education, and Welfare proposal for an Environmental Health Center near Rockville, Md. The Panel raised several questions but stated that "* * * there is an urgent need for expanded activities in research and control measures related to environmental health and concurs that a center in the Washington area to house administrative support and certain research activities will facilitate development of the field."

The report of the Panel is as follows:

"PRESIDENT'S SCIENCE ADVISORY COMMITTEE AD HOC PANEL ON ENVIRONMENTAL HEALTH

"An ad hoc Panel was convened on May 18, 1961, to consider the Department of Health, Education, and Welfare proposal for an Environmental Center at Rockville, Md. Members of the Panel attending were: Dr. Colin MacLeod, Chairman; Dr. Rolfe Eliassen, Dr. George Kistiakowsky, Dr. Robert Loeb, Dr. Gerald McDonnel, Dr. Russell Morgan, Dr. Dickinson Richards, Dr. James H. Sterner, Dr. James Whittenberger, Dr. Abel Wolman, Dr. Herbert Bosch.

"The Panel heard briefings by representatives of Health, Education, and Welfare on the scientific aspects of the proposed Center program, the personnel requirements and a general discussion of the overall program plans, including budget estimates for grants, contracts, and fellowships for the next 5 years. Bureau of Budget representatives discussed long-range significance of the proposed Center.

"The Panel identified what appeared to be the major issues and discussed each of the following:

"1. Does the Public Health Service require a new center for administrative and research activities in environmental health?

"The consensus was that such a Center is necessary, not only to house its present activities, but also for future development. There was agreement that activities at the Taft Center and associated laboratories in Cincinnati plus those required by the rapid expansion proposed for the next 5 years, cannot be accommodated without extensive additional construction. For a variety of reasons, Cincinnati is not considered a suitable location for expanded facilities. These include inadequate land area at the present sites, difficulty in attracting scientific and technical personnel, lack of strong academic institutions in the area and physical separation from administrative branches of the PHS and other departments of Government such as Interior, Agriculture, and Commerce.

"2. Should the new environmental health center be located in the Washington area?

"The Panel endorsed the plan to locate the regulatory, technical assistance, and administrative functions of the program in the Washington area, but had reservations as to the requirement for housing the major Government research facilities of all phases of the proposed program in a single Center.

"The Washington area has clear-cut advantages because of proximity to administrative branches of PHS, the research activities of the NIH, and the related programs of other departments of the Federal Government. Further, it can be argued that administrative, control, and enforcement activities will benefit from close proximity to laboratories conducting research on the technical problems. At the same time, it is recognized that decentralization has been successful in the cases of the Communicable Disease Center in Atlanta and the various laboratories of the Atomic Energy Commission. The Panel was not aware of a study to determine the feasibility of establishing decentralized Federal research units either at existing Government laboratories or in association with universities. See paragraph 4 below.

"3. What is a reasonable rate of growth for the proposed Center program?

"It is clearly apparent that the chief problem in developing sound scientific as well as control programs is the availability of competent people in the various fields of science who can contribute to the solution of problems of environmental health.

"The Surgeon General's report to the Congress in 1960 and the testimony of experts before the Appropriations Subcommittee of the House in March 1960 emphasized the critical shortage of persons qualified for research on problems of environmental health. In recognition of this need the PHS established research training grants and 'project' grants in the fields of radiological health, industrial hygiene, etc. These grants have had the immediate effect of increasing competition among universities for competent faculty members as well as for the few promising students entering the environmental health field. Undoubtedly, in the long run, these grants will enable universities to train more highly qualified people, particularly when the importance and the attractions of the field of environmental health become better recognized. In the meanwhile, the best interests of the program will be served by restricting expansion to limits set by the availability of highly qualified people.

"One of the difficulties besetting environmental health research is the requirement of participation by many disciplines, including not only medical scientists and engineers, but also a long list including chemists, physicists, ecologists, and many others. Past experience has shown that, on the average, the less able graduates in the various disciplines have been attracted to the environmental health field. After entering the field, they may suffer by isolation from the mainstreams of advance in the parent discipline. This factor is also relevant to a decision about the wisdom of centralizing Federal research in a single facility in Washington, since there are no strong academic institutions in the community, with interests in environmental health.

"For these reasons, the Panel believes that Government research facilities should be developed on a selective basis to satisfy specific needs. The proposed broad expansion appears too rapid for the supply of qualified manpower. Implicit in this consideration is the necessity for a clear delineation by the PHS of the substantive nature of the research program to be carried out in the proposed Center. The Panel is of the opinion that the program has not been given adequate consideration and that this is a fundamental requirement for sound planning for the Center.

"4. Need for evaluation of existing governmental laboratories that can contribute to studies of environmental health.

"Program planning of new facilities for the five major areas of research proposed for the Center should include an evaluation of existing Government laboratories with demonstrated competence in closely related scientific areas. For example, in the field of radiological health, the Panel noted the potential availability of the several AEC National Laboratories for the conduct of large-scale radiobiological and chronic toxicity experiments. The PHS does require laboratories for epidemiologic research on human populations, since this area of public health concern is not adequately provided for by other agencies.

"Whether or not an expanded central laboratory is established in the PHS, some leaders in the environmental health field believe strongly that there should be regional laboratories, based in or very closely associated with universities having interest and competence in one or more of the fields of environmental health. Three considerations lead to this conviction:

> "(*a*) The critical shortage of research personnel creates the need to take advantage of the leadership and training potential of university departments which have competence in environmental health. One of the recognized limitations of Government research laboratories is that they contribute very little as research training institutions, in contrast with universities.
>
> "(*b*) Environmental health problems are often of greater regional interest than national concern; for example, air pollution in California and water pollution in the Ohio River Basin. Such regional challenges increase the likelihood of attracting able research workers, especially if a university is involved. The Public Health Service has taken advantage of some opportunities of this kind, but could do so in more effective fashion.
>
> "(*c*) The field of environmental health is very broad and engages the attention of many disciplines. A university-centered laboratory would enable research workers to maintain close contact with other workers in their own discipline. Continuing contact with the parent discipline promotes research skills of the individual and also increases the possibilities of fruitful interchange between basic and applied research.

"RECOMMENDATIONS

"1. The Panel recognizes and endorses the position of the Public Health Service that there is an urgent need for expanded activities in research and control measures related to environmental health and concurs that a Center in the Washington Area to house administrative support and certain research activities will facilitate development of the field.

"2. The proposed program expansion (to the level of $300 million per year in 5 years) is rapid. The Panel is acutely aware of the severe shortage of well-qualified scientists in the field, and for this reason recommends that major emphasis for the immediate future be given to the development in the universities of scientific personnel. The expansion of the proposed central facility should be related to availability of personnel for the needs of the Federal Government as well as those of communities and universities throughout the country.

"3. The research program of the proposed center requires much more careful delineation and projection. Except in the case of ongoing programs to be transferred from facilities such as the Taft Center, the Panel did not feel that enough effort had been directed to identification of major problems and drafting of the blueprints of specific research to be undertaken.

"4. In consonance with recommendations of other committees, it is recommended that strong, university-based centers be set up not only for research and education, but also to help in the solution of local environmental health problems. The present and proposed 'regional laboratories' which are in essence 'field stations' do not fulfill this requirement.

"5. The potential of other Federal laboratories to assist in the solution of problems of environmental health requires serious exploration. This does not appear to have been done with the thoroughness and imagination that the potentialities merit. For example, the superb facilities at the Brookhaven and Oak Ridge National Laboratories have not been considered in the field of radiological health."

June 14, 1961.—The President sent to the Congress an amendment to the 1962 budget requesting funds for site acquisition and planning for the proposed Environmental Health Center. The request was disallowed by the Committee on Appropriations, U.S. Senate.

July 5, 1961.—The Deputy Director, Bureau of the Budget, wrote to the Secretary, Department of Health, Education, and Welfare, confirming understandings arrived at prior to the budget submission, through discussions participated in by representatives of the Department, the President's Science Adviser and staff, and representatives of the Bureau of the Budget. This letter also established the procedure for review of the environmental health programs and facility needs and established a time schedule for its completion. The letter and review procedures were as follows:

"EXECUTIVE OFFICE OF THE PRESIDENT

"BUREAU OF THE BUDGET,
"*Washington 25, D.C., July 5, 1961.*

"MY DEAR MR. SECRETARY: On June 14, the President sent to the Congress an amendment to the 1962 budget in the amount of $3,515,000 for site acquisition and detailed planning for the proposed Environmental Health Center. The discussion which preceded this action, in which you, members of your staff, the President's Science Adviser and staff of the Office of the President participated, produced a number of understandings which I would like to confirm in this letter.

"1. The funds for detailed planning included in the budget amendment will be reserved pending a further study and review of environmental health research programs and facility needs. As a part of the review, a departmental task group will prepare long-range research objectives in each program area and recommendations on the appropriate Federal programs to accomplish those objectives. The task group will give special attention to (*a*) research manpower requirements, both Federal and non-Federal, and necessary training and other programs to meet those requirements; (*b*) the appropriate emphasis between intramural Federal research efforts and extramural efforts, and Federal programs, both as to personnel and facilities, needed to carry both efforts forward; and (*c*) the current research activities and facility resources of other Federal agencies and appropriate interrelationships and coordination, including the possible sharing of research facilities. The review will be concluded by December 1, with a target date of November 1 for completion of work by the Department's task group. The plans and conclusions developed in this review will produce a determination of facility requirements for the various environmental health programs which will permit detailed planning for the new facilities to proceed. Enclosed is a more complete outline of the steps involved in this review.

"2. Acquisition of about 690 acres for the main population center at the facility and special radiation research facilities will proceed as soon as funds become available, with the understanding that no commitment is involved as to the type or extent of the latter facilities. The decision to seek funds for 690 acres in the absence of an approved facility plan was based in large part upon a general belief that land acquisition requests should take into account the full range of possible future needs. Should the needs in this case fail to materialize, the excess acreage can either be retained as a general Federal acreage reserve for future development or can be returned to private ownership.

"3. Procurement of land for special open area facilities for such purposes as an animal farm is postponed indefinitely pending further development of research program and facility needs. If needed at a later date, it is understood that acreage for these general purposes would be sought at a separate location in an area not planned for high-density development.

"4. The Department will continue to work closely with the National Capital Planning Commission, both with respect to the specific acreage to be acquired and with respect to the size and location of structures, utilities, and facilities to be constructed.

"Sincerely yours,

"(Signed) ELMER B. STAATS,
"*Deputy Director.*

"The Honorable Secretary of Health, Education, and Welfare

"Enclosure.

"*General Outline for Review of Environmental Health Research Programs and New Facility Needs*

"1. A departmental task group will be formed to undertake the necessary review in each of the five program areas. The task group will include, in addition to departmental officials, appropriate outside consultants, and possibly representatives from other interested Federal agencies. Consultants will be selected in consultation with the President's Science Adviser. The task group is to prepare long-range research objectives in each program area and recommendations on the appropriate Federal programs to accomplish those objectives. Special attention will be directed to (*a*) research manpower requirements, both Federal and non-Federal, and necessary training and other programs to meet those requirements; (*b*) the appropriate emphasis between in-house Federal research efforts and extramural efforts, and Federal programs, both as to personnel and facilities, needed to carry both efforts forward; and (*c*) the current research activities and facility resources of other Federal agencies and appropriate interrelationships, coordination, and possible sharing of research facilities.

"2. The Bureau of the Budget and the Office of the Science Adviser, with agency representatives, will broaden and intensify its current review of the relative biomedical research responsibilities and activities of the Atomic Energy Commission and the Department of Health, Education, and Welfare in the radiation field in order to formulate an effective delineation of responsibility for major research areas between the two agencies. Such study will give specific attention to future utilization of existing research facilities as between the two agencies.

"3. Following completion of steps 1 and 2, the Executive Office will undertake, through the facilities of the Science Adviser's Office and the Budget Bureau, to obtain the views of other interested Federal agencies with respect to the proposed research programs and related facility needs.

"4. The ad hoc panel of scientists convened on May 18 by the Science Adviser to review the Public Health Service research plans and facility proposals will be recalled for an overall review of the plans and conclusions stemming from the foregoing.

"5. Step 1, above, will be completed by November 1 and entire review will be completed by December 1."

November 1, 1961.—The Committee on Environmental Health Problems (Gross committee), established in accordance with the directive from the Bureau of the Budget, submitted its report to the Surgeon General. The committee recommended "that the Environmental Health Center, including the Office of Environmental Health Sciences, be located in the Washington area."

While the President, in his health message, recommended the establishment of a National Environmental Health Center, review of the "Report of the Committee on Environmental Health Problems" was not completed in time for the proposal to be included in the regular budget for 1963.

Membership of the "Committee on Environmental Health Problems" together with conclusions and recommendations of the committee and background information on the effort needed in environmental health, is as follows:

"MEMBERSHIP OF THE COMMITTEE ON ENVIRONMENTAL HEALTH PROBLEMS

"Ahlberg, Clark D., Dr.: Vice president for administration and research, Syracuse University, Syracuse, N.Y.

"Anderson, Gaylord, Dr.: Mayo professor and director, School of Public Health, University of Minnesota, Minneapolis, Minn.

"Chambers, Leslie A., Dr.: Scientific director, Allen Hancock Foundation for Scientific Research, University of Southern California, Los Angeles, Calif.

"Dack, G. M., Dr.: Director, Food Research Institute, University of Chicago, Chicago, Ill.

"Dambach, Charles A., Dr.: Director, Natural Resources Institute, Ohio State University, Columbus, Ohio.

"DuBois, Kenneth P., Dr.: Professor of pharmacology, University of Chicago, Chicago, Ill.

"Goldblith, Samuel A., Dr.: Professor, Department of Food Technology, Massachusetts Institute of Technology, Cambridge, Mass.

"Gordon, Seth:[1] Vice president, North American Wildlife Foundation, 1390 Seventh Avenue, Sacramento, Calif.

"Gross, Paul M., Dr., Chairman: Professor, Department of Chemistry, Duke University, Durham, N.C.

"Handler, Philip, Dr.: Chairman, Department of Biochemistry and Nutrition, Duke University School of Medicine, Durham, N.C.

"Hatch, Theodore F., Dr.:[2] Professor of industrial health engineering, University of Pittsburgh, Pittsburgh, Pa.

"Logan, John, Dr.: Chairman, Department of Civil Engineering, Northwestern University, Evanston, Ill.

"Merrill, Malcolm, Dr.:[3] Director of public health, State Department of Public Health, Berkeley, Calif.

"Metzler, Dwight: Director, Division of Sanitation, Kansas State Board of Health, State Office Building, Topeka Avenue at 10th, Topeka, Kans.

"Morgan, Russell, Dr.:[4] Professor of radiology, Johns Hopkins University Medical School, Baltimore, Md.

"Mrak, E. M., Dr.: Chancellor, Department of Food Technology, University of California, Davis, Calif.

"Silverman, Leslie, Dr.: Science director, School of Public Health, Department of Industrial Hygiene, Harvard University, Boston, Mass.

"Weckel, K. G., Dr.: Professor of dairy and food industries, College of Agriculture, University of Wisconsin, Madison, Wis.

"Hollister, Hal: Chief, Radiological Health System Analysis, Division of Radiological Health, Public Health Service; executive secretary, Committee on Environmental Health Problems.

"Hyde, Robert T.: Chief, scientific publications, the Robert A. Taft Sanitary Engineering Center, Public Health Service; final report editor, Committee on Environmental Health Problems.

"SUBCOMMITTEE MEMBERSHIPS

"Manpower Resources and Training: Dr. Handler (chairman) and Dr. Morgan.

"Applied Mathematics and Statistics: Dr. Silverman (chairman), Dr. Dambach, Dr. Ahlberg, Dr. G. Anderson, and Dr. Logan.

"Pharmacology, Toxicology, Physiology, and Biochemistry: Dr. DuBoise (chairman), Dr. Handler, Dr. Mrak, Dr. Hatch, and Mr. Gordon.

"Analytical Methods and Instrumentation: Dr. Chambers (chairman), Dr. Goldblith, Dr. Merrill, Dr. Metzler, and Dr. Morgan.

"Air Pollution: Dr. Merrill (chairman) and Dr. Dambach.

"Environmental Engineering: Dr. Logan (chairman), Dr. Silverman, and Dr. Ahlberg.

"Milk and Food: Dr. Dack (cochairman), Dr. Goldblith (chairman), Dr. Mrak, and Dr. Weckel.

"Occupational Health: Dr. Hatch (chairman), Dr. DuBois, and Dr. Handler.

"Radiological Health: Dr. Morgan (chairman) and Dr. G. Anderson.

"Water Supply and Pollution Control: Mr. Metzler (chairman), Dr. Chambers, Mr. Gordon, and Dr. Dambach.

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[1] Water Pollution Control Advisory Board member, Aug. 7, 1958–June 30, 1961.

[2] Surgeon General's Advisory Committee on Occupational Health member.

[3] National Advisory Committee on Community Air Pollution member.

[4] National Advisory Committee on Radiation member.

"CONSULTANTS TO SUBCOMMITTEES

"Applied Mathematics and Statistics:
  - "Dr. Frank Murray, professor of mathematics, Mathematics Department, Duke University, Durham, N.C.
  - "Dr. Thomas F. Mancuso, chief, Division of Industrial Hygiene, Ohio State Health Department, Columbus, Ohio.
  - "Dr. A. G. Oettinger, computation laboratory, Harvard University, Cambridge, Mass.
  - "Dr. Wilfrid Joseph Dixon, professor of preventive medicine, University of California Medical Center, Los Angeles, Calif.
  - "Dr. Frank Corbato, deputy director, Computer Department, Massachusetts Institute of Technology, Cambridge, Mass.

"Analytical Methods and Instrumentation:
  - "Dr. Arnold Beckman: president, Beckman Instrument Co., Fullerton, Calif.

"Air Pollution:
  - "Dr. Eugene Gillis, health commissioner, Philadelphia Department of Public Health, Philadelphia, Pa.
  - "Mr. S. Smith Griswold, air pollution control officer, Los Angeles County Air Pollution Control District.
  - "Dr. Glenn R. Hilst, vice president, Travelers Research Center, Inc.
  - "Dr. H. F. Johnstone, research professor of chemical engineering, Department of Chemistry and Chemical Engineering, University of Illinois.
  - "Dr. Robert A. Kehoe, professor of industrial medicine, Kettering Laboratory, University of Cincinnati.
  - "Dr. John T. Middleton, chairman, Department of Plant Pathology, University of California.
  - "Dr. Norton, Director, Institute of Industrial Medicine, New York University.
  - "Mr. Alexander Rihm, Jr., executive director, Air Pollution Control Board, New York State Department of Health.
  - "Dr. Waldo L. Treuting, School of Public Health, University of Pittsburgh.

"Environmental Engineering:
  - "Mr. Samuel Baxter, commissioner and chief engineer, Philadelphia Water Department, Philadelphia, Pa.
  - "Mr. Erick Mood, director, Bureau of Environmental Sanitation, New Haven Health Department, New Haven, Conn.
  - "Mr. Paul Opperman, executive director, Northeast Illinois Metropolitan Area Planning Commission, Chicago, Ill.
  - "Mr. Paul W. Purdom, director, Division of Environmental Health, Department of Public Health, Philadelphia, Pa.
  - "Mr. William A. Xanten, Superintendent, Division of Sanitation, District of Columbia Government, Washington, D.C.

"Occupational Health:
  - "Dr. Clyde Berry, University of Iowa.
  - "Dr. Earl Irvin, medical director, Ford Motor Co.

"Radiological Health:
  - "Dr. Charles L. Dunham, Director, Division of Biology and Medicine, U.S. Atomic Energy Commission, Washington, D.C.
  - "Dr. Donald R. Chadwick, Secretary, Federal Radiation Council, Washington, D.C.

"Water Supply and Pollution Control:
  - "Dr. Lewis Koenig: physical chemist consultant, San Antonio, Tex.

"Report of the Committee on Environmental Health Problems:

"CONCLUSIONS AND RECOMMENDATIONS

"The Committee has reviewed the problems which face this Nation in the field of environmental health, particularly as they relate to the mission of the Public Health Service. The Service has established programs dealing with certain aspects of environmental health. However, the growth of our technology and the urbanization of American society have proceeded at a pace with which the Service's current programs are not prepared to cope. From its total evaluation of the problem, the Committee concludes—

"That a national need exists for establishment and maintenance of a vigorous and integrated effort to maintain controls over the human environment compatible with projections of change in both population and the environment itself.

"That the current 'categorical' approaches represented by Public Health Service divisional programs are incapable of providing either (*a*) the necessary cognizance of combined mutliple effects of environmental impacts or (*b*) the depth of effort required by individual divisional programs.

"That accommodation to the national needs in environmental health will require the establishment of a strong focal center adequately staffed and equipped to prosecute an effective and integrated program within the Public Health Service and to manage and coordinate a strong extramural research, training, and technical support program utilizing the available institutional resources of the Nation.

"That an adequate legislative basis for a sufficient national program in environmental health does not exist at present.

"One of the factors missing in the current efforts of the Service is a place at which primary responsibility for the control of environmental hazards comes to a focus. The Committee believes that immediate action should be taken to establish a center where the operational, research, and training programs of the Service in environmental health can be brought together. This is not to say that all of these functions of the Service should be centralized. On the contrary, many must remain close to the place where environmental hazards exist. However, the complexity of the problem requires that the Service's programs be designed with a total perspective toward the environmental health needs of the Nation. This perspective can best be gained by a concentration of primary effort at a center.

"Therefore, the committee makes the recommendations given in the following paragraphs:

"1. PUBLIC HEALTH SERVICE RESPONSIBILITY IN ENVIRONMENTAL HEALTH

"(*a*) A major national effort, both governmental and nongovernmental, must be started if the environmental health problems resulting from the rapid growth of our highly technological civilization are to be adequately understood and if measures for their control and ultimate prevention are to be developed.

"(*b*) It is essential that the Federal Government assume leadership in the research and development effort required to supply knowledge and techniques to the discrete State and local agencies of all types engaged in prevention and control activities for alleviation of threats to health from the environment.

"(*c*) The focus of this national effort should be centered in the U.S. Public Health Service.

"(*d*) The leadership of the Public Health Service in the prosecution of a national environmental health program should utilize to the fullest possible extent existing university, industrial, governmental and other research and technological capabilities through grants and contracts for research, demonstrations, and educational and training facilities. Extramural extensions of the Federal activity should comprise a major fraction of the total annual effort.

"2. MANPOWER NEEDS

"(*a*) In undertaking a national program in environmental health, high priority should be given to the early initiation of adequate training programs for a wide range of personnel in the physical, biological, and social sciences. These efforts should include the strengthening of the divisional training programs, the creation of a new program of institutional grants for comprehensive environmental health training, and the continued support of the Service's short-term, internal programs. Funds in excess of $25 million are urgently needed to place these programs in full operation. Training effort of this magnitude will not create an imbalance with other scientific needs of the United States.

"(*b*) Strong efforts are needed to improve the status and income levels of environmental health scientists to permit Federal, State, and local health agencies to recruit needed personnel.

"3. NEED FOR A NATIONAL ENVIRONMENTAL HEALTH CENTER

"To implement effectively the development of a focal point within the U.S. Public Health Service for an enhanced and major national effort in environmental health, the committee recommends the establishment of a Center for Environmental Health, which should include the following elements:

"(*a*) The headquarters activities of the present operational programs, including their administration, fundamental and applied research, and the national pool of resource personnel who supply information and assistance relating to control activities to the dispersed regional laboratories and instrumentalities operating wherever preventive and control measures are required.

"(*b*) The administrative headquarters of a unified environmental health grants program in support of fellowships, university training programs, university-related research projects, and demonstration grants to properly constituted agencies.

"(*c*) Appropriate facilities for the conduct of special training programs.

"(*d*) A new 'Office of Environmental Health Sciences,' independent of the divisional structure and with separate budgetary provision, consisting of scientific groups reporting to the scientist who is Director of the Office of Environmental Health Sciences. These groups, which would include biological, physical, and social scientists, as well as mathematicians, would study basic problems in environmental health, undertake research on problems of common interest to the several divisions where desirable, provide central services in mathematics, statistics, data processing, information storage and retrieval, instrumentation and analytical laboratory procedures, etc., and provide advice and consultation to the Bureau of Environmental Health with respect to the overall direction of research. Beyond these functions, these groups would be specifically charged with the continuing responsibility for an overall purview of the entire field of environmental health.

"4. LOCATION OF THE ENVIRONMENTAL HEALTH CENTER

"The committee recommends that the Environmental Health Center, including the Office of Environmental Health Sciences, be located in the Washington area.

"5. PROGRAMS IN ENVIRONMENTAL HEALTH

"(*a*) The Bureau of State Services (Environmental Health) is presently organized into five working divisions, a structure which evolved as needs were recognized. It is recommended that, as soon as possible, each of the operating programs be strengthened materially with respect to staff and facilities, so as to accomplish their specific missions more effectively.

"(*b*) In view of the growing environmental health hazards resulting from rapidly changing technology and increasing population the country over, the committee recommends the continuing development of regional facilities, supplementary to the Center, with adequate staff and facilities to conduct applications research, training, and control activities appropriate to the regions involved.

"(*c*) The committee recommends that as the Public Health Service moves toward the broader and more comprehensive effort here proposed, every effort be made to conserve the real strengths of the present program during the transition period and that intensive study be given to an optimal organization pattern for environmental health activities within the U.S. Public Health Service.

"6. RELATIONSHIP OF PROGRAMS OF BUREAU OF ENVIRONMENTAL HEALTH TO THOSE OF OTHER FEDERAL AGENCIES

"The broad scope of the problem of environmental health relates to virtually all of man's activities. It is to be expected, therefore, that the specific programs of the Bureau of State Services (Environmental Health) will frequently be contiguous with those of other agencies. It is imperative therefore that continuing effective liaison be maintained between the Bureau and other national, State, and local agencies so as to maximize the effectiveness of each while avoiding unnecessary duplication of effort.

"7. NEED FOR LEGISLATION

"(*a*) The committee recommends that the Public Health Service seek such legislation as may be required to establish a Bureau of Environmental Health with necessary authorization to conduct research, training, and technical support activities, and to administer a broad program of extramural training, research, demonstration, and institutional support grants and contracts. Such authorization should be in addition to existing legislation governing operation of the divisional programs. It should be designed to supplement, rather than limit, the existing authority for divisional operation.

"(*b*) The committee recommends that a statutory Advisory Council on Environmental Health be established to advise the Surgeon General on matters concerning policy, operations, research, and training in the field of environmental health. This council would also serve as an advisory group for the Environmental Health Center, including the Office of Environmental Health Sciences.

"Additional conclusions and recommendations, appropriate to the more detailed consideration of subject matter, appear in the subcommittee reports.

" 'THE EFFORT NEEDED IN ENVIRONMENTAL HEALTH

" 'It has stated that "the history of public health is * * * the story of man's endeavors to protect himself and his community against disease."[1] Its role today must be enlarged to include provision for the positive protection of the healthy against the adverse influences of a highly complex technological society which operates in evermore crowded communities.

" 'The past 50 years have witnessed an unprecedented overall trend toward the improvement of the community health. Yet, this advance has not been uniform either within communities or between various parts of the world. A large group of countries generally underdeveloped in an economic and technological sense, and often new as independent nations, still have problems of preventable disease like those with which the countries of Western Europe and the United States had to cope 75 to 50 years ago * * * however, in economically more fortunate countries, such as the United States, Great Britain, and a number of others in Western Europe, the actual problems of community health are very different * * * a whole set of newer problems has appeared, and it is with these that the community health program of the next 50 years will have to be concerned.

* * * * * * *

" '* * * as the problems of commnicable disease have declined in urgency, the community health program has broadened to include, wherever feasible, other elements and situations that may adversely affect the physical and mental well-being of people in the community. The widening horizons of public health have in recent years come to include such problems as accident prevention and mental health, as well as renewed emphasis on the control of the physical environment. With our expanding and changing industrial technology have come environmental alterations of increasing complexity. The once dominant problems of bacterially contaminated air, water, and food have now been replaced in considerable degree by chemical pollution, and the possible relation of this condition to the induction of cancer. Recent years have also brought about an increasing amount of discussion of the social and economic changes accompanying our expanding industrialism.

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" 'Recent years have brought an increasing awareness of the problem of atmospheric pollution * * * in the same category is the new and important field of radiological health * * * Then there is the problem of housing.'[2]

"As the nature of public health problems has changed over the years, local, State, and Federal governmental relationships with respect to meeting these problems have also been evolving to the present pattern. A former Surgeon General of the U.S. Public Health Service has noted that the Public Health Service is unique in the number and scope of its responsibilities, within the Federal Government and in the Nation, for environmental health.[3] He also portrayed in greater detail the scope of environmental health and the nature of the problems faced. Major program areas around which the Public Health Service is organized[4] are water supply and pollution control, air pollution, radiological health, milk and food protection, occupational health, and environmental engineering, including accident prevention and protection against solid wastes. The scope and details of these current problems are reviewed in the reports of the divisional subcommittees.

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[1] George Rosen, "A History of Public Health" (New York: MD Publications, Inc., 1958, p. 14.

[2] Ibid., pp. 486–489.

[3] "Environmental Health." The Surgeon General's report to the House Committee on Appropriations. U.S. Public Health Service, Department of Health, Education, and Welfare, January 1960.

[4] See appendix for statement of present organization.

"What factors will determine the nature and magnitude of an adequate national environmental health program in the future? Projections and predictions abound which purport to describe the growth of the American population in the remainder of this century, and the increasing faction of older individuals in the population; the ever-increasing complexity of our technology; the development of new industries; and increasing reliance on nuclear power; the magnitude of the gross national product; the magnitude of the national agricultural effort; the introduction of new chemicals into our food, water, air, clothing, tools, and toys; the coalescence of huge metropolitan areas; altered means of communication and transportation; new modes of dress; increased leisure time and the demand for recreational facilities. The exact magnitude of any one of these projections may be open to question, but their trend is all too apparent. And from these technological, agricultural, economic, and social changes must, inevitably, arise a panoply of diverse problems in environmental health which must be solved before they are permitted to become acute.

"Many of these problems have been identified and are presented in detail, in the subcommittee reports. It is from consideration of the nature and magnitude of these problems that the broad guidelines of the necessary national effort in environmental health emerge. A few examples illustrating this principle are presented later in this report.

"It is apparent from these examples, and from many others cited in the subcommittee reports, that there are numerous functions, such as epidemiology and biostatistics, which are common to environmental health programs. Some of these functions are even now ongoing in current programs, albeit at an inadequate level. One approach to a strengthened national environmental health program would be simply to expand each of the ongoing programs and staff each so as to permit apparently adequate performance in all desirable functions. Indeed, this has been the history of the U.S. Public Health Service program based upon specific 'categorical' legislation. But the committee is strongly of the opinion that this is not a sound basis of an adequate long-range national program in environmental health. Ultimately, this must result in unnecessary duplication of effort while completely failing to provide an integrative synthesis of those facets of the various environmental health problems which are held in common. In consequence, the committee recommends the creation of a comprehensive Environmental Health Center.

"As presently envisioned, the Center would contain the following:

"1. The headquarters activities of the present operational programs, including their administration, fundamental and applied research, and the national pool of resource personnel who supply information and assistance relating to control activities to the dispersed regional laboratories and instrumentalities operating wherever preventive and control measures are required.

"2. The administrative headquarters of a unified environmental health grants program in support of fellowships, university training programs, university-related research projects and demonstration grants to properly constituted agencies.

"3. Appropriate facilities for the conduct of special training programs.

"4. A New 'Office of Environmental Health Sciences' independent of the divisional structure and with separate budgetary provision, consisting of scientific groups reporting to the scientist who is Director of the Office of Environmental Health Sciences. These groups which would be specifically charged with the continuing responsibility for an overall purview of the entire field of environmental health, would include biological, physical, and social scientists as well as mathematicians, free to study basic problems in environmental health and undertake research on problems of common interest to the several operating units where desirable, while providing central services in mathematics, statistics, data processing, information storage and retrieval, instrumentation and analytical laboratory procedures, etc., and providing advice and consultation to the Bureau of Environmental Health, with respect to the overall direction of research.

"It is the Office of Environmental Health Sciences, in particular, which will make possible an integrated national environmental health program while avoiding unnecessary duplication of effort. It offers a new method of attacking those facets of environmental health problems which are common to many of the operational programs. By its integrated approach it can identify and appraise environmental health problems which are not under consideration. At the same time it can develop protection criteria which are based on all aspects of the environment.

"The committee considers that one of the strongest arguments for the Center is that it provides a focal point for the entire national environmental health program. By locating the operational programs contiguous to each other and to the Office of Environmental Health Sciences, the following advantages accrue:

"1. There will be available to all units central facilities and personnel for such functions as toxicology, epidemiology, applied mathematics, instrumentation, systems analysis, data processing and information storage and retrieval.

"2. Each operational unit will have available to it a large pool of scientific specialists and experts for advice and consultation. By the same token it provides an effective device for cross-fertilization both as between operational programs and between disciplines.

"3. Clearly such a Center provides a sounder and more comprehensive structure for the conduct of both intramural and extramural training programs.

"4. It will minimize unnecessary duplication of effort in both fundamental and applied research programs.

"5. It will make possible within the Center a coordination of the efforts of the individual operating programs and will provide a base for more effective relations with other related institutions both within and without the Government.

"Clearly, the success of the Center is entirely contingent upon the caliber of its scientific personnel. It may well be necessary to take extraordinary measures with respect to salary structures, working conditions, etc., in order to recruit and hold top-level scientists.

"The total environmental health program of the Public Health Service should be so designed and funded as to provide for fullest possible utilization of the Nation's existing scientific manpower, research capabilities, and regulatory agencies. The committee believes that this objective can be achieved through a well-planned system of grants and contracts for research, demonstration, training and program operations, managed from a national Center.

"While a substantial proportion of the entire program should be developed extramurally, the effective employment of such dispersed national resources will require the existence of an intramural activity in depth and breadth sufficient to evaluate, review, and maintain intelligent working relationships with the external programs. Competence and facilities for such management, and for translation of the resulting findings into control practice, will best be developed within a unified Environmental Health Center.

"With the need for and development of a Center identified as the major focal point for environmental health within the Public Health Service, the role of regional and field stations and facilities must be considered.

"It is the committee's opinion that such field stations and laboratories can best serve a particular environmental health program and obtain fundamental and applied data relating to some specific limited projects (such as shellfish or saline water problems).

"If a center of the type recommended is developed, considerations arise as to choice of location for such a center. In addition to the present operation programs, it is essential to have top-level personnel available drawn from the natural and social sciences and mathematics under the Office of Environmental Health Sciences. This group would perform functions of the types delineated in the first four subcommittee reports.

"Beyond the performance of such functions, this group would provide a necessary internal core of scientific leadership whose responsibility would be to provide overall guidance and direction to the major effort necessary in relation to environmental health problems. No present program of governmental health activity exceeds in scope and complexity that which will be involved in environmental health.

"Cogent arguments relating to the shortage of and competition for top-level scientific talent can be made,[6] which appear to have considerable validity and

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[6] See the minutes of a meeting of the President's Advisory Committee ad hoc panel on environmental health, in the appendix of this report.

which point to a more segmented development of strong scientific leadership groups located near and working with major university centers.

"The committee carefully weighed and discussed the import of these arguments as they related to their concept of the 5- to 10-year needs for manpower, facilities, and resources, reasonably commensurate with the level which would be required for a major effort in solving environmental health problems. There is a need for central focus and leadership in a Public Health Service environmental health program of the type envisaged. This program must be related to other Public Health Service activities as well as Government agency programs related to environmental problems.

"Immediate planning must be undertaken for the staffing, organization, and facilities of central environmental health groups within the Public Health Service. Even if such planning proceeds rapidly, the benefits that the committee envisages from focal centralization of this type will probably not be realized in less than 4 years.

"After examining all the operational, regulatory, and research aspects of the proposed and existing programs in environmental health, the committee recommends that the Environmental Health Center, including the Office of Environmental Health Sciences, should be located in the Washington area. Our reasons for this are based on the necessity for the regulatory and operational aspects of the environmental health program to be contiguous. Similarly, the operational and research programs in environmental health can function much more effectively if they are in close contact with one another.

"Similarly, there are many Public Health Service interdepartmental problems which arise that call for frequent and interdisciplinary review. Proximity to the National Institutes of Health with the Clinical Center and the National Library of Medicine is essential for research and access to clinics and patients. Another cogent reason is the need for contact with many other Government agencies and departments working in ancillary fields in environmental health such as the Defense Department, Interior Department (Bureau of Mines), Commerce Department (Bureau of Standards and Weather Bureau), and the Atomic Energy Commission.

"An example concerns the relationship of the Division of Radiological Health to the Atomic Energy Commission. The subcommittee considering the radiological health program believes that this problem should be dealt with, as soon as possible, by the creation of a Radiation Hazards Research Liaison Committee composed of the Chief of the Division of Radiological Health, Public Health Service, an appropriate representative of the Atomic Energy Commission, and such other personnel from the two agencies as may be needed. This committee would meet at frequent intervals to review Public Health Service and Atomic Energy Commission radiation research programs and to plan and devise ways and means whereby the resources of one agency may be used to advance fully the programs of the other. This committee would review budgetary proposals in all areas of common interest before annual budgets are submitted for consideration to the Bureau of the Budget. Although a Radiation Hazards Research Liaison Committee of the type set forth here may not resolve all of the questions of program duplication, it should go a long way to resolve misunderstandings concerning the content of Atomic Energy Commission and Public Health Service programs in radiological health and will assure Congress that the full resources of both agencies are being brought to bear on the radiological problems of the Nation."

February 27, 1962.—The President, in his health message, recommended the establishment of a National Environmental Health Center to serve as "the base laboratory for research and training activities, and as headquarters for Public Health Service personnel concerned with health hazards in the environment."

The President's statement was as follows:

[Excerpt]

PRESIDENT'S HEALTH MESSAGE, FEBRUARY 27, 1962

"In order to provide a central focal point for nationwide activities in the control of air pollution, water pollution, radiation hazards, and occupational hazards, I recommend the establishment of a National Environmental Health Center. This center will serve as the base laboratory for research and training activities, and as headquarters for Public Health Service personnel concerned with health hazards in the environment. It will facilitate regular and frequent collaboration between Public Health Service scientists and those with whom they should consult in other Federal agencies. The center will serve also to encourage closer cooperation with industrial research and control groups, with universities and private foundations, and with State and local agencies."

May 22–24, 1962.—The Conference of State Sanitary Engineers passed the following resolution in support of the establishment of an Environmental Health Center in the Washington area:

"CONFERENCE OF STATE SANITARY ENGINEERS, 37TH MEETING, WASHINGTON, D.C.

"RESOLUTION NO. 2, ENVIRONMENTAL HEALTH CENTER OF PHS

"Whereas an effective environmental health program in the Public Health Service requires the integration of all required disciplinary groups in a coordinated activity, and the fostering of the closest possible relationships among program operations, technical assistance and research, and

"Whereas a pressing need exists for effective liaison and coordination with other Federal departments and agencies and other components of the Public Health Service located in the Washington area, and

"Whereas effective and current communication with the Office of Science and Technology of the President's Office, the Congress and the headquarters of many national organizations is of increasing importance in environmental health, and

"Whereas broad policy development and executive direction of the Public Health Service are conducted at its headquarters, and

"Whereas the conduct of the several categorical programs encompassed in environmental health can be done most economically and efficiently by providing for joint use of certain common facilities, instrumentation and supporting services, and

"Whereas strong central administration is requisite to effective utilization of regional and other field facilities: Therefore, be it

"*Resolved, by the Conference of State Sanitary Engineers*, That an Environmental Health Center be established by the Public Health Service, with suitable physical facilities, for the administration of program operations, technical assistance, and fundamental and applied research in environmental health: and be it further

"Resolved, that such Environmental Health Center be located in the vicinity of Washington, D.C., And be it further

"Resolved, that copies of this resolution be transmitted to appropriate committees of Congress, the Surgeon General of the Public Health Service, and the Association of State and Territorial Health Officers."

August 13, 1962.—The President's supplemental appropriation request included an item of $2,761,000 for site acquisition and planning of an Environmental Health Center. This proposal was modified in accordance with recommendations of the Committee on Environmental Health Problems. This request was disallowed by the Supplemental Appropriation Committee, House of Representatives.

October 10–12, 1962.—The Association of State and Territorial Health Officers passed the following resolution supporting the establishment of an Environmental Health Center in the Washington area:

"ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS ENVIRONMENTAL HEALTH COMMITTEE

"RESOLUTION NO. 4
ENVIRONMENTAL HEALTH CENTER OF PHS

"Whereas an effective environmental health program in the Public Health Service requires the integration of all required disciplinary groups in a coordinated activity, and the fostering of the closest possible relationships among program operations, technical assistance and research, and

"Whereas a pressing need exists for effective liaison and coordination with other Federal departments and agencies and other components of the Public Health Service located in the Washington area, and

"Whereas effective and current communication with the Office of Science and Technology of the President's Office, the Congress and the headquarters of many national organizations if of increasing importance in environmental health, and

"Whereas broad policy development and executive direction of the Public Health Service are conducted at its headquarters, and

"Whereas the conduct of the several categorical programs encompassed in environmental health can be done most economically and efficiently by providing for joint use of certain common facilities, instrumentation and supporting services, and

"Whereas strong central administration is requisite to effective utilization of regional and other field facilities, therefore, be it

"*Resolved*, That the Association of State and Territorial Health Officers urge the establishment of an Environmental Health Center by the Public Health Service within the vicinity of Washington, D.C., with suitable physical facilities, for the administration of program operations, technical assistance, and fundamental and applied research in environmental health; and be it further

"*Resolved*, That copies of this resolution be transmitted to appropriate Committees of Congress, the Surgeon General of the Public Health Service, and the Secretary of the Department of Health, Education, and Welfare."

February 7, 1963.—The President in his health message renewed his request for the Environmental Health Center by asking "that the Congress approve the funds requested in my 1964 budget for initial steps to establish a central facility in the Washington area which can serve as a focal point for related research, training, and technical assistance in environmental health." The President's statement was as follows:

[Excerpt]

The President's Health Message, February 7, 1963

"ENVIRONMENTAL HEALTH

"The long-range assault of multiple environmental contaminations on human health are cumulative and interrelated. It is of great importance, therefore, that our efforts to learn about and control health hazards be unified and mutually supporting. The President's Science Advisory Committee, in cooperation with the Federal Council for Science and Technology, has undertaken a major review of the Government's activities with respect to the use of chemicals in the environment. Special attention is being given to the control of pesticides. Nearly 180 million pounds of pesticides valued at more than $1 billion are used in the United States every year. If this review reveals need for additional authority, necessary recommendations will be made to the Congress.

"I am renewing my recommendation of last year that authority be granted to the Surgeon General of the Public Health Service with the approval of the Secretary of Health, Education, and Welfare, to bring environmental health functions together in one bureau. I also ask that the Congress approve the funds requested in my 1964 budget for initial steps to establish a central facility in the Washington area which can serve as a focal point for related research, training, and technical assistance in environmental health."

ADVERSE RECOMMENDATIONS ON SITE SELECTION

Mr. Fogarty. What experts have said it should not be located here?

Dr. Anderson. I do not know of any that have said it should not be located here.

MEANING OF TERM "FIRST PHASE"

Mr. Fogarty. This is described as being the "first phase" of the center. Would you describe what the first phase of the center will be and what you envision for development after that?

Dr. Anderson. Yes. The first phase of the center building program would provide for the staff in this area at the completion of the construction of these buildings. This first phase would accommodate slightly more than 1,600 people in 412,000 net square feet of space.

In this request for planning and acquisition money, we are envisioning getting, however, a piece of ground sufficiently large to accommodate anticipated expansion as we see it up until the middle of the next decade.

CURRENT ACTIVITIES TO BE SHIFTED TO CENTER

Mr. FOGARTY. What current activities would be shifted to the center?

Dr. ANDERSON. Principally the function of research, basic, fundamental research necessary to backstop the field programs that we would carry out in our field stations. This is research which is not immediately directed to solving field problems. However, it is research which would develop, I believe, ideas which would be of assistance, let's say, in removing detergents from water, or research on principles which might relate to improved prevention of automobile combustion pollution. It would also relate to understanding the kind of chemical reactions that are taking place in the air over such places as Los Angeles and other cities with smog problems. In those cities the chemicals being put into the environment are themselves actually being changed by chemical reactions under the influence of sunlight. We need to understand these phenomena in order to work out better control methods. Another feature of the research program, Mr. Chairman, would be aimed at understanding the health impact of multiple exposures to several different kinds of noxious agents.

EFFECT OF ENVIRONMENTAL HEALTH CENTER ON SIZE OF FIELD STAFF

Mr. FOGARTY. Would this result in closing or significantly reducing the staff at any location?

Dr. ANDERSON. I do not anticipate that it would. The center planned will accommodate about 1,600 people, as I mentioned. Of the staff that would go into the center, we will have in the Washington area about 1,100 in 1964. Some people brought in from some of our field activities, universities, and other places would be on the staff of the center at the time it was completed. However, it would not reduce significantly any of the field activities that we have underway currently. As a matter of fact, for every person that we have in Washington today, we have two and one-half people who are working out in field stations in the activities now underway there. Our projections for program growth are such that we anticipate that this will continue to be the case when the center is completed.

Mr. FOGARTY. That is all I have on the center, but because so many questions have been raised by members of the committee, we will pass this around before we go on to other items.

Mr. Denton.

TYPE OF RESEARCH TO BE CONDUCTED

Mr. DENTON. In the environmental health facility will you do research work on water?

Dr. ANDERSON. We will do research work on water and on air, on radiation and their effects on people, and biological life. We will do research on industrial health problems. We will do research on food protection. The kind of research, Mr. Denton, that we will do will be fundamental research applicable to the problems generally over the country; but in addition to this kind of research that we would do at the center, we would need to do research and investigations within some of the regions to adapt the principles that we have uncovered in our headquarters research to the problems that exist there.

Mr. DENTON. Will you take the men in this environmental health center from the field or will it be new personnel?

Dr. ANDERSON. We already will have 1,100 people here in 1964 that would go into the center. The additional people would come from some of our field activities, if they were qualified for the work that we would be doing in the center or they would be recruited.

AFFECT ON TAFT CENTER

Mr. DENTON. Take the Robert Taft Laboratory in Cincinnati. Would you take men away from there to work here?

Dr. ANDERSON. Some of the individuals who are out at Taft Sanitary Engineering Center would be moved into this Environmental Health Center just as some of the individuals who are at the Taft Center will also be moved to the regional field stations that we are developing to approach local problems. This will depend upon the individual and his competencies. Currently, practically all of our top research personnel in the field of environmental health are headquartered at the Taft Sanitary Engineering Center. When the proposed Center became operative we would move the directors of research and some of the fundamental laboratories from Cincinnati to Washington. However, the question that must be in your mind is, What would we use the Taft Sanitary Engineering Center for? This Center was originally designed and developed as a developmental research center for pilot plant operations; to remove bacteria and virus from water, to safeguard the quality of the milk supply through the equipment and processes that are used in the handling of milk, and to study the auto exhaust problem itself by actually running automobiles, for examples. In other words, the kind of space we have there was designed for mockups, you might say, of actual field situations together with the laboratory backup for these activities. We will need to keep on doing this kind of research there.

Mr. DENTON. How many people are now employed at the Robert Taft Laboratory?

Dr. ANDERSON. In Cincinnati currently we have about a thousand people employed. Of that number, less than half of them are housed in the Taft Sanitary Engineering Center. The balance of the people are in rented space in numerous buildings around the town.

Mr. DENTON. How many of those will be brought to this Environmental Health Center?

Dr. ANDERSON. Well, here again we are talking about the movement of an individual because of his special competencies. Some of these individuals certainly will be moved to the Environmental Health Center and some of the fundamental research functions will be moved here. However, there will be others who will be going into the space that they vacate because we need to develop much more effort on the developmental research that is needed to solve on a pilot plant basis some of the problems we have.

Mr. DENTON. I take it from your statement that all who are taken away to go to the Environmental Health Center and all who go to the regional labs will be replaced at the Taft Center?

Dr. Anderson. It is pretty hard to promise you, sir, as to what may happen 8 years hence. But if the kind of effort that was suggested by the advisory committees and the kind of effort that we have projected in our thinking for the program for the environmental health work is anywhere near approached, we will need about the square footage that we have proposed here in the Environmental Health Center and that which we currently operate in Cincinnati.

Mr. Denton. As I get it, in all probability the force will not be reduced in Cincinnati?

Dr. Anderson. This would be my guess, sir.

Mr. Denton. Can you give us any idea how many people would be transferred from the Taft Laboratory to the Environmental Health Center?

Dr. Anderson. I would guess probably—it is primarily scientists that we are talking about—I would guess there might be something in the order of 100 to 150.

Mr. Denton. How many would be taken to the regional offices?

Dr. Anderson. Well, actually this is a rotational process. As these water pollution control laboratories in the regions are being developed, we are taking some people, some of the key people who will operate the regional water pollution laboratories out of the activity at the Taft Center now. But they are being replaced by men who, in turn, are going to be developed or groomed for jobs in the other regional laboratories.

Mr. Denton. This means that there will be more research now on water pollution and air pollution and matters of those kinds if we build this Environmental Health Center?

Dr. Anderson. Yes, sir. That is one of the conclusions that the advisory groups recommended to us.

Mr. Denton. And there will be more people employed, but in all probability the number at the Robert Taft Center will be the same?

Dr. Anderson. Yes, sir. The big growth with regard to activity here is going to come in field stations. Numerically, this is where the biggest growth is going to take place.

Mr. Denton. You mean the regional offices?

Dr. Anderson. Regional offices, regional laboratories, and special studies. Currently we have 22 laboratories which are the bases for our field investigations.

Mr. Denton. I think that is all.

Mr. Fogarty. Mr. Lesinski?

WATER POLLUTION RESEARCH

Mr. Lesinski. The remarks of Dr. Terry and yours do not coincide. By your own statement you are duplicating the effort at the AEC, the Taft Center, and other places in the Nation, here in your environmental center; correct?

Dr. Anderson. No. We would not be duplicating.

Mr. Lesinski. You said water pollution.

Dr. Anderson. Certain aspects of water pollution research would be done at the environmental health center and another kind of problem would be attacked at Cincinnati, and the actual solving of a local problem would be done by the regional water pollution control laboratories.

For example, one kind of research that we are doing currently in the water field relates to finding organisms, bacteria, viruses, or fungi that might work upon these very troublesome chemicals that pass through our present municipal treatment plants. Now, this bacteriological, virological, or microbacterial research really starts out by an expert who understands many things about bacteria and viruses. Should he find, for example, as one of our men has found, a fungus that possesses a certain capability to break down a chemical that has been a bothersome chemical in water-treatment processes—and I am thinking now of the year 1970 when this headquarters center would exist—he would report this finding to the director of the research program for water pollution control at the center. In turn this water research chief would ask the Cincinnati group to test this theory in our special facility there where there is a room twice as high as this room where we can run polluted water through various treatment processes. He would have in this plant a controlled, simulated field circumstance. If the theory worked there the next step would be to take it out to one of the regional laboratories where the ultimate test thereon would be made in an actual situation in a water-treatment plant with observations being made by the regional researchers to see whether the fungus would continue to break down this chemical.

POSSIBILITY OF RESEARCH DUPLICATION

Mr. Lesinski. Well, true, but you are still duplicating much of the work of AEC and other operations. Agriculture is also doing the same thing; right?

Dr. Anderson. No. We are not duplicating them now. However, one of the reasons for locating this center in the Washington area is to assure that we don't unnecessarily duplicate the work that other agencies might do. In the example that you used, fallout and its effects upon food supplies and its intake by man, we are primarily concerned with what the American public is receiving in the way of radiation exposures and the effect of these exposures. We are also concerned about doing something to reduce those exposures. To do this we have to know something about how the radioisotopes that are present in fallout move through the environment to expose people. Are they inhaled, for example, as fallout might occur? Do they move through the food chain? Is this the way that they get into man? Or do they come through the water chain? And here, not only are our water, food, milk, and air programs involved, but we would undertake joint projects with the Department of Agriculture and others to study these phenomena in the context of the interest of the various governmental agencies. The Atomic Energy Commission is certainly interested because of its concern with the problem.

Mr. Lesinski. Well, it has been some years since I have studied this but I have gone through the whole of the information available and found that strontium 90 is the main—it is not the killer, but it is the main aftermath. The biggest problem is that it is taken up by the shallow root plants. After a fallout a cow grazing on grass, it gets into the animal and the bones and the milk. You can eat the meat but you cannot drink the milk without taking in strontium 90. It seems to me that all the stuff that has been gone over and gone over by AEC and others you want to go over it again.

Dr. ANDERSON. We don't want to go over anything again, sir. Actually——

Mr. LESINSKI. What is AEC doing then?

Dr. ANDERSON. We and Agriculture and AEC have jointly participated in some research projects. The ones that come to my mind immediately are those relating to the movement of strontium 90 through the air into the soil, onto the plants, into cows, into milk, and into the milk supply. In assessing the contents in milk, for example, and understanding what practices might be instituted by the farmer himself to cut down——

Mr. LESINSKI. But the answer is already there. The higher the calcium content in the soil the less strontium 90 the plant will take out because they are identical in composition. They are both similar in composition and the more calcium or lime in the soil the less strontium 90 the plant will take. The answer is already there.

Dr. ANDERSON. This is one of the things the Department of Agriculture has been investigating in cooperation with us as it relates to this problem.

Mr. LESINSKI. Well, Dr. Terry and I had a round about this on the same thing. The point that I am—I am not opposed to studying these things because it is important to all of us. I am in full accord, but I don't like the idea of duplication if it is unnecessary.

Dr. ANDERSON. This would be one of the purposes of our having the research direction, the research planning, and the research reviewing right here at the headquarters where the same functions are done in other governmental agencies so the chance for duplication and repetition will be minimized.

SOURCE OF FUNDS FOR ENVIRONMENTAL ACTIVITIES

Mr. LESINSKI. Another point, too. According to Dr. Terry and, of course, you hit on it slightly, is the fact that the main purpose of the center is for coordination of the various research programs. That is why I originally said you varied from Dr. Terry. The other point, too, you already said you have 1,100 employees. Where did you get the money for it?

Dr. ANDERSON. From this committee and from the Congress, sir.

Mr. LESINSKI. Did you not take part of it originally from the $34 million in water pollution to get started?

Dr. ANDERSON. No, sir.

Mr. LESINSKI. That is the information that I have.

Dr. ANDERSON. No. Originally—this goes back to the appropriations history of the Department's budget—originally there was, within my time, one appropriation item which was called "Sanitary engineering services" or "activities." I cannot recall which it was.

Mr. FOGARTY. This committee did it. Three or four years ago we told you in the report to use some more funds for "Milk, food, and interstate sanitation" because of the urgency of getting something done in that area. We told you to use other funds you had. So it was not the Public Health Service. It was the committee that took this responsibility. I was questioned about it afterward by some Members of Congress and that is why I remember it.

Mr. LESINSKI. Well, then I have been misinformed and I am sorry to have made that statement if it is wrong. Mr. Chairman, could we have the clerk look up the pertinent language of the report and place it in the record because there are apparently some misconceptions about this.

Mr. FOGARTY. I think it would be a good idea.

(The following is from the committee's report on the 1960 bill—Rept. No. 309, 87th Cong., 1st sess.:)

> The committee has gained the distinct feeling that activities concerned with milk and food sanitation and inspection of interstate carriers has been so overshadowed by the larger programs of air pollution control and water supply and water pollution control as well as the expanded program of radiological health, that they have not received anywhere near the attention which is due them on the basis of their importance. The committee expects that, within the amount provided, additional attention be given to this division's activities in connection with interstate shipment of milk, shellfish sanitation, and inspection of interstate carriers.
>
> The committee also recommends that in the preparation of the budget for 1961 serious consideration be given to setting forth separately in the budget all water pollution control activities, and all air pollution control activities. This will give everyone concerned a much clearer picture of what is being spent on these activities, than is shown when they are partially amalgamated under the general title "Sanitary engineering activities," and partially set out separately.

SUPPLY OF QUALIFIED PERSONNEL

Mr. LESINSKI. Another point, too, that I brought up with Dr. Terry is the fact that the opposition to this environmental health center which is for the purpose of coordinating information—there is a shortage of qualified personnel to handle the number of people you intend to have there. Your eventual acquisition of 5,000 employees will create a dearth of qualified people in universities, et cetera, and throughout the whole country. That should hurt the program more than help it.

Dr. ANDERSON. So far this has not operated to the detriment of work by universities and other agencies in this field.

As part of the program, however, the planning that we are doing and the recommendations of the advisory groups, does call for us to maintain the emphasis and increase in training as a matter of fact, in universities.

This we would do through the support of the training activities in this field by educational institutions. However, the projections of the advisory committee that I referred to are such that the manpower requirements needed for these programs are not out of line with the growth projections for the next 10 years that have been made by the National Science Foundation for the scientific fields that work on these kinds of problems.

In other words, if we but maintain the proportion that we have now of the existing manpower out of the increased manpower that will be available in these fields, we should be able to operate our program without depleting the supply of talents in the universities.

PERSONNEL CAPACITY OF CENTER

Mr. LESINSKI. I will ask of the figures given—they are in the record—your ultimate goal was 5,000 people and you claim you have 1,100 now and you would put on another 400.

Dr. **Anderson.** That would be the capacity for the center—

Mr. **Lesinski.** For how many years would that be?

Dr. **Anderson.** If we started construction now, it would be 1968 or 1969 before we would begin to occupy the center.

Mr. **Lesinski.** Do you intend to maintain that 1,500 level for some years in the future?

Dr. **Anderson.** No. Projections that we have made for program needs in this area would call for more people to be active in this endeavor in subsequent years.

However, we are not proposing to build for our projections beyond that time because the actions of the Congress and developments that might take place between now and then might change the total capacity that we would want to put into our broad effort.

However, the ground that would be obtained, sir, would be sufficient to accommodate a plant which could hold, say, about 5,000 people.

Mr. **Lesinski.** In other words, you will be down to a billion dollar agency.

Dr. **Anderson.** I doubt that.

Mr. **Lesinski.** Eventually.

Dr. **Anderson.** I can't say, sir, as to what the ultimate might be. However, our advisers and our own estimates haven't carried us to this level.

The figure that is in the advisory committee report sir, for the ultimate, as the advisers could see it, was for ultimately about a $350 million expenditure, of which less than a third would be indirect Federal employment.

Mr. **Lesinski.** Well, the basic idea of coordination, of bringing together the development knowledge of the Nation, I think, is vital and I concur with that. But duplication is what has me bothered if that is what you intend to do.

Dr. **Anderson.** There is a feature of these problems which is almost unique. For example, in our air pollution work, there are many activities that go on in the Department of Commerce in the Weather Bureau that have pertinence to the research work that we would be interested in as it would relate to air pollution, the movement of air masses, carbon dioxide levels that vary from region to region in the country, and some of the meteorological phenomena which take place. What we want to do is to gear our work in such a fashion that we take advantage of information that they have and in turn we provide them with information that we could give, so we don't duplicate.

AUTOMOTIVE EXHAUST CONTROL

Mr. **Lesinski.** You mentioned automotive exhausts. Although that is a concern of the Government, isn't that a problem of private industry to develop such equipment?

Dr. **Anderson.** Certainly it is and private industry is quite active in this field.

However, much of the kind of information we obtain is of use to them and, in turn, information that they obtain is of use to us. We have a group that exchanges information on the work that they are doing and the work that we are doing.

Work that we are doing relates for example to the kinds of driving patterns that might increase or decrease the amount of pollution being put into the atmosphere by the operation of automobiles and, the effects, health and otherwise, of automobile exhausts. The Surgeon General recently made a report to the Congress on this.

Mr. Lesinski. I knew the answer ever since I started driving a car. Regardless, the Chrysler Corp. has put out a turbine engine that the exhaust is to the minimum. Have you looked into that engine?

Dr. Anderson. Yes. We are very much interested in this development by the Chrysler Corp. We just learned that they are going to make available to us one of their first models when they get them off the line. The production of these is limited for the immediate future.

Mr. Lesinski. Seventy-five.

Dr. Anderson. They are distributing them to people who can do test work on them which can contribute to a better understanding of what the potentials are.

Mr. Lesinski. It is experimental. I am not sure of the story. They did give it to select people only for experimental purposes.

That's all, Mr. Chairman.

Thank you, Doctor.

Mr. Fogarty. Mr. Laird?

Location of Environmental Health Center

Mr. Laird. Dr. Anderson, I am kind of shocked that you have not given us information where this is going to be built. Where is it going to be built? Let's stop beating around the bush, where is it going to be built?

Dr. Anderson. In the Washington area.

Mr. Laird. Where?

Dr. Anderson. In the Washington area.

Mr. Laird. Where in the Washington area?

Dr. Anderson. We have three sites that have been generally approved.

Mr. Laird. What site are you going to take?

Dr. Anderson. Well, we are hoping that we can obtain land which isn't included in the three sites that are approved by the National Capital Planning Commission.

Mr. Laird. Last year you came up here and testified before the House Appropriations Committee and Dr. Hundley said "We are prepared to decide on the site tomorrow once we have the funds."

Now, this testimony was taken some time ago. As a matter of fact this testimony was taken August 27 and you were ready to decide on August 28, according to this testimony, where you would be building it?

Dr. Anderson. That was the situation at that time. The site referred to was what we call the 70–S site, which is just north of Rockville. Since that time——

Mr. Laird. The committee denied you the funds at that time. The committee made a very wise decision because you would have built in the wrong place; is that right?

Dr. Anderson. As a matter of fact there was expression of opinion that the cost of the acreage of that desired site was too high for this purpose.

FUNDS BUDGETED FOR PURCHASING LAND

Mr. **Laird.** You are asking for $2,761,000. How much of that are you going to put in the site?

Dr. **Anderson.** $1,320,000.

Mr. **Laird.** For the site?

Dr. **Anderson.** That's the amount that is in the request available for the purchase of the site.

ALTERNATIVE SITES

Mr. **Laird.** And this new site that you are looking at is in Virginia?

Dr. **Anderson.** No, sir.

Mr. **Laird.** In Maryland?

Dr. **Anderson.** No, sir.

Mr. **Laird.** Where?

Dr. **Anderson.** In the District of Columbia.

Mr. **Laird.** It is in the District of Columbia?

Dr. **Anderson.** Yes, sir.

Mr. **Laird.** The District of Columbia is complaining about all of this property being taken over by the Federal Government and they are coming to the Congress asking for larger Federal contributions because they feel that the Federal Government has already taken too much land, too much property off the tax rolls. Certainly the District would lead me to believe that we have gone too far in this limited area in taking over property.

I can't understand why you would want to build this in the District of Columbia.

Dr. **Anderson.** There is a possibility, sir, that we could obtain land that is already Government property for this purpose.

We don't know for sure whether this will come about.

Mr. **Laird.** Well, perhaps it might be better for this land to be placed on the tax rolls so that the District government is able to derive real estate taxes and is in a position where it can handle some of its school problems and welfare problems and other financial problems which confront the District government.

EFFECT ON PERSONNEL AT TAFT CENTER

Now, you say in your testimony today that you intend to keep the Taft Center operating with about a thousand employees?

Dr. **Anderson.** By the year 1969 or so my guess is that we will still have need for space out there for as much as a thousand employees.

Mr. **Laird.** You have a thousand employees there now?

Dr. **Anderson.** Yes, sir.

Mr. **Laird.** In the testimony last year it was visualized and I quote that "400 to 500 people will be required at the Center on a continuing basis."

Why is your figure going from 500 people to a thousand people in the testimony today?

Dr. **Anderson.** That figure which was developed there was developed within the context that, in addition to the people that we would have in the Environmental Health Center in the Washington area, we would have additional people outside of the Environmental Health Center in the Washington area. We estimate now that such people rather than being housed in Washington or the functions being in Washington could well be in Cincinnati.

Mr. LAIRD. You don't think it is a good idea to have too much growth here in Washington?

Dr. Anderson, have you changed your mind on that?

Dr. ANDERSON. If we didn't have facility to house them here, I think the natural thing would be that we would use space that we already had under rental arrangements in Cincinnati rather than to make additional rental arrangements in the Washington area.

CURRENT STAFF IN WASHINGTON AREA

Mr. LAIRD. You indicated, in an answer to a question by the chairman, that you now have about 1,000 people in the area that will be part of the staff employed in the new Center?

Dr. ANDERSON. Yes, sir.

Mr. LAIRD Could you give me the location of those people, a breakdown?

Dr. ANDERSON. Yes.

Mr. LAIRD. Have you got it with you?

Dr. ANDERSON. Yes, currently, in 1963 there are 717 positions in the buildings that are down here, just off of Independence and there are 246 people who are out in the Rockville area.

That does not come to 1,100. It is a little less than a thousand in 1963.

Mr. LAIRD. What are these people doing now?

Dr. ANDERSON. For the most part they are carrying out the functions of program planning and direction in all fields with the exception of the research field and the training field. Research and training activities in most of these programs currently is done at the Robert A. Taft Center.

They are doing regulation, enforcement, control, technical assistance, directing demonstration programs, and administering the grants that we have for the support of research and the support of training activity by universities around the country.

INTEREST EXPRESSED IN LOCATING CENTER OUTSIDE WASHINGTON AREA

Mr. LAIRD. How many colleges and universities put in an application for this Environmental Health Center?

Dr. ANDERSON. We have had several expressions of interest in this. I don't recall the number.

Mr. LAIRD. It is my understanding that there are some 26. Is that correct, that have expressed an interest in this?

Dr. ANDERSON. It would depend what you mean by an expressed interest, Mr. Laird.

If you are talking about a letter, this might be——

Mr. LAIRD. Indicating an interest in making a proposal on this.

Dr. ANDERSON. There was an interest in the Boston complex of universities, there was an interest in New York, there has been interest in Wisconsin, there has been a specific proposal from the State of

North Carolina with regard to land in the research triangle. There is interest in Atlanta and interest on the west coast in San Francisco.

However, the things that we have to do in a headquarters activity for this broad program are such that we could not operate a headquarters plant in those locations.

A research activity, yes. But not a headquarters function.

RESEARCH FACILITY OPERATION OUTSIDE WASHINGTON AREA

Mr. LAIRD. Don't you think a research activity would operate more efficiently outside of the Washington area?

Dr. ANDERSON. No, I don't think so, sir.

Mr. LAIRD. You were director of the Communicable Disease Laboratory in Atlanta?

Dr. ANDERSON. Yes, sir.

Mr. LAIRD. It seemed to me since I have been in contact with that laboratory, that the research work and the other work carried on there is of a very high quality and that the investigators feel that they are better off being out of this Washington complex as far as their work is concerned. What is your attitude toward that? I want your personal opinion.

Dr. ANDERSON. I was in charge of the Communicable Disease Center for 4 years and so I am quite familiar with the program there and with the functions that have to be performed in that program.

Most of the functions of the Communicable Disease Center relate strictly to the control of communicable diseases. There is very little need for coordination of either their research or their operational activities with other governmental agencies.

Mr. LAIRD. Certainly there is great need for communication between the Communicable Disease Laboratory and the Public Health Service headquarters here.

Dr. ANDERSON. Yes, there is. And we performed those by travel and by telephone communication and we did it at some additional expense.

Mr. LAIRD. The chairman earlier today was talking about worldwide medical communications, so that we would be able to examine patients in London and a doctor in New York would be able to look at the X-rays and give his diagnosis, and things like that. There are tremendous breakthroughs in this whole area of communications. Mr. Sarnoff in his article in the Saturday Evening Post would lead one to believe that certainly with these new breakthroughs we can and should have dispersal.

Certainly the Defense Department's basic research work is mostly out of Washington and in various areas all over the country.

The Radiological Laboratory of the Navy, where the top radiological work is done, is in San Francisco on the west coast. We are taking the space research work and putting that down in Houston. The Atomic Energy Commission's basic research work is in Idaho and in several other sections of the country. In the discussions with these groups, in the defense committee anyway, I am led to believe that they feel that they have a better research atmosphere outside of the Washington area.

I can see where you might want your administrative staff, and some environmental health programing perhaps, in the Washington area;

but I can't see why your basic research program, and that is what this is going to be, should be located here. This isn't going to be applied research. This is basic research. Applied research you are going to have all over the country anyway under that program of regional laboratories, isn't that true?

Dr. ANDERSON. That's right.

Mr. LAIRD. I just can't understand this.

Dr. ANDERSON. We feel that since we will have but one basic research facility——

Mr. LAIRD. I am not talking about having two. I am talking about having this in Illinois, or California, or New York, or North Carolina—there are 50 States in this Union, and it just seems to me that a college or a university complex, would be a much better place to locate a basic research laboratory.

Dr. ANDERSON. First of all, we already have a separated, small basic research effort, which is present, as I mentioned, at Cincinnati.

The difficulties that we have had, in using that basic research, to guide the programing in research, and to guide the programing in demonstrations and in application, from Cincinnati, have led us to propose that we bring in our own basic research function, to the Environmental Health Center in the Washington area.

Now, we are not going to do all of the basic research, ourselves, as you can understand. This will be done also by universities and other groups, too, with some participation. Mr. Laird, currently, Washington is a scientific community. Studies which have been done of the location of scientists will show that Washington is one of the top scientific communities of the country.

Mr. LAIRD. That is because we are locating so many laboratories here, in this area. The Government has created this. These people didn't just happen to show up here. It is because of the actions of Congress, in approving projects such as this, in the District of Columbia area, that has caused this to happen and I think it is about time that the Congress took a real good look at this whole program of concentration in this area.

CIVIL DEFENSE RECOMMENDATIONS FOR DISPERSAL

Here we have the civil defense organization coming before our Defense Committee, telling us that we have to make greater effort for dispersion. This is one arm of the Government coming in and testifying before one subcommittee, saying that we have got to disperse more in this country, and now you want to bring all the scientific community into the Washington area.

Have you cleared this with the Office of Civil Defense?

Dr. ANDERSON. This has been cleared by the President's Science Adviser, and by the Bureau of the Budget. This is our channel for clearance.

Mr. LAIRD. You have had no conversations with anybody in Civil Defense on it?

Dr. ANDERSON. No, sir.

Mr. LAIRD. Are you familiar with their recommendations?

Dr. ANDERSON. No, I am not, with regard to this.

Mr. LAIRD. We have had quite a few conversations in regard to this buildup here in the District of Columbia, and I just cannot see where this is the area for concentration of basic research work. I know that you had all the experts look at this, and evidently, they made this decision on the basis of the number of scientists that are available in this area.

Dr. ANDERSON. No. I think the guiding point, that led them to their recommendation for a basic research component of the Environmental Health Center, was they felt it was extremely important to have top competency, top brains, in house and at hand—at the headquarters, where they can shape, not only the program in the environmental health field of the Public Health Service, but where they can relate to the top scientists in other departments, for directing and planning programs.

Mr. LAIRD. You know, you drive downtown in the District of Columbia, you can't miss seeing a new Government building going up. Before one is finished they have started two more. And you hear all these complaints from people in the District, that the Federal Government is encroaching too much in this area, causing them so many problems. It's hard for me to follow this particular recommendation.

COST OF ENVIRONMENTAL HEALTH CENTER

What is the total cost of this construction program—the first phase of this program?

Dr. ANDERSON. Slightly over $30 million.

Mr. LAIRD. Well now, what is the $60 million figure that was bandied about in last year's hearings?

Was that the total program?

Dr. ANDERSON. If the land were fully developed in terms of the buildings that would take care of the employment, that might exist in the 1970 decade, the total plan might cost that much.

Mr. LAIRD. So we are really talking about quite an investment here, as far as the Federal Government is concerned.

How many employees do you envision by the 1970's, with the $60 million facility?

Dr. ANDERSON. We are talking here about land, which would accommodate a complex of buildings which would take care of as many as 5,000 people.

Mr. LAIRD. So this, if it is carried out, if the full plans are carried out, there would be 5,000 people involved in this complex of buildings.

Dr. ANDERSON. This would be the capacity of the land and the facilities that you could get on such land.

Mr. LAIRD. It must be going quite high in the air.

Dr. ANDERSON. I hope not too high because construction costs go up the higher you go.

Mr. LAIRD. I did not realize that there was that much land available around the District of Columbia.

Dr. ANDERSON. This surprised us too, sir.

Mr. KELLY. You understand, Mr. Laird, we are not recommending to you a plan that has been approved for anything like 5,000 people but we are saying to you, we want to develop this in such a way, that we are foresighted enough to have made a plan that is feasible to expand and not end up by having built a small program, and then expand.

Mr. **Laird**. I understand we are talking about the future, but once we make this decision, and approve the $2,761,000, we are starting that program.

SITE FOR ENVIRONMENTAL HEALTH CENTER

Now, this land, in the District, you can secure it for $1,300,000. Is that correct?

Dr. **Anderson**. We don't know whether there would be any cost attached to this in the District. Also, at this point, we don't know whether we can get it. This is a new development that has come up since the budget has been prepared, and submitted to Congress.

Mr. **Laird**. So you probably don't need all this money.

Dr. **Anderson**. If we can't get free land, we are going to need all that money.

Mr. **Kelly**. It is possible that a site could be selected which would not require that, in which event, we could advise the committee immediately of the revised site cost.

PROPOSALS FOR LOCATING CENTER OUTSIDE WASHINGTON

Mr. **Laird**. Of the 20-some proposals which you received from all over the United States, which are tied in with university complexes, some of them are firm proposals, are they not?

Dr. **Anderson**. Particularly, there is one I recall.

Mr. **Laird**. I understand Mr. Oscar Ewing has had a visit with you, in which he outlined a proposal in which there would be no cost to the Government for land.

Dr. **Anderson**. Yes; and the Governor of North Carolina has proposed that too, to the Secretary, that the State of North Carolina would provide land in the Research Triangle, for this activity.

Mr. **Laird**. How many others made a similar offer in the correspondence that you have received?

Dr. **Anderson**. My recollection is that that is the only offer in which we had an offer of free land.

Mr. **Laird**. Mr. Chairman, I would like placed in the record at this point, copies of all the communications which the Department of Health, Education, and Welfare has received, from areas throughout the United States, expressing an interest in the location of this particular facility in their State or at their university.

(The letters follow:)

County Commissioners,
Prince Georges County,
Upper Marlboro, Md., March 11, 1961.

Hon. John F. Kennedy,
President of the United States,
Washington, D.C.

Dear Mr. President: Responding to your letter of March 4, 1961, I would like to make it known that the officials of Prince Georges County are moving with haste to accelerate our building program as you request.

Last week, our sale of bonds, $11,400,000, was for the construction of schools, roads, libraries, office buildings and parks. These projects will certainly stimulate the economy in a small way as a contribution toward the goals of your vigorous program.

Mr. President, I have been personally working to procure for Prince Georges County, the "Environmental Health Research Center" which is to be built by the Department of Health, Education, and Welfare. There are some very fine locations in our county that have excellent access to good high-speed roads for the entire metropolitan area, also water, sewer and all necessary utilities. The installation is most welcome by the officials and the people. We would appreciate your consideration and any possible help you will give us to procure same.

Forgive me for infringing upon your busy schedule. May God bless and help you with your tremendous effort to place our Nation where it belongs, out in front.

Very truly yours,

FRANK J. LASTNER.

U.S. SENATE,
COMMITTEE ON THE JUDICIARY,
March 23, 1961.

Hon. ABRAHAM A. RIBICOFF,
Secretary of Health, Education, and Welfare.

DEAR MR. SECRETARY: I am happy to learn from the attached letter that three environmental health research centers are under consideration.

The State of Mississippi, five counties, and our capital city of Jackson are cooperating in the construction of a 400,000 acre-foot reservoir on Pearl River 6 miles north of Jackson, Miss. We anticipate that the reservoir structure will be completed in 1962 and water impoundment will begin upon its completion. This activity offers an excellent opportunity for environmental health studies prior to, during, and following the construction of such water resources. This is particularly needed in the South where water impoundment is unusual instead of the rule.

I urge you to consider this site when a selection is made.

With kindest regards and best wishes,

Sincerely,

JAMES O. EASTLAND,
U.S. Senator.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., April 21, 1961.

Hon. ABRAHAM RIBICOFF,
The Secretary of the Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: I am enclosing for your consideration and advice a letter from Mr. I. E. Robinson of Glen Burnie, Md., concerning a proposed site for a health center.

Thank you for your assistance and with kindest regards, I am

Sincerely yours,

RICHARD E. LANKFORD,
Member of Congress.

ROBINSONS,
Glen Burnie, Md., April 13, 1691.

Hon. RICHARD LANKFORD,
U.S. House of Representatives,
Washington, D.C.

DEAR MR. LANKFORD: In the Washington Evening Star of Tuesday, April 11, I noticed that the Department of Health, Education, and Welfare is considering a site for a new health center.

I wrote to the Honorable Abraham Ribicoff and Mr. John L. Moore of the General Services Administration, referring to 319 acres of land that I own at Gambrills, Md., with approximately three-quarters of a mile road frontage on each side of Gambrills Road that connects with the Baltimore Beltway and the Washington Expressway. This land is in close proximity to Fort Meade and the National Security Agency installation.

If you feel, as I do, that it would be good to have this facility in our county, be it on my land or any other land, I would suggest that you lend your good offices to try to bring it to our area.

With best regards,

Respectfully yours,

I. E. ROBINSON.

WISCONSIN COUNCIL OF AGRICULTURE COOPERATIVE,
Madison, Wis., May 18, 1961.

Under Secretary IVAN A. NESTINGEN,
Department of Health, Education, and Welfare,
Washington, D.C.

DEAR IVAN: I realize that before a new man has had time to get firmly anchored it is wrong to make new proposals. In short, I know that you are extremely busy facing the many challenges of your new responsibility.

During my years of contacts with national agencies and movements, I have become convinced that there is too much of a tendency to center various developments in the Washington area. It came home to me most emphatically when serving as a member of a citizens' evaluation committee relative to the future of the USDA Agricultural Experiment Center at Beltsville. I am convinced that we in the Middle West have a right to believe that many installations could as well be made out here in the great central belt.

I am suggesting the desirability of locating the proposed Environmental Health Institute in the Middle West. At least it is my understanding that the Department of Health, Education, and Welfare is presently considering the establishment of such an Environmental Health Research Institute. The relationship of air to man, soil to man, water to man, land to man and many other environmental factors should be given the type of investigation and research that I understand is now under consideration.

I realize in searching out a location for an environmental health campus, that your Department will make a rather exhaustive study of the availability of hospitals and libraries, as well as such environmental factors as air and water pollution, diversity of soil conditions, the influence of sound, and many other contributing factors.

In this connection I realize that you will be one of the first to give your home city of Madison all due consideration. The University of Wisconsin with its outstanding biochemistry department, a fine medical school and an excellent college of agriculture would be a great ally to such a proposed environmental health research center. Such environmental factors as lakes, streams, marshes, climate, and diversity of soil conditions are worthy of consideration, not to mention the fact that Madison is most accessible from the standpoint of travel and nearness to large centers of population and industrial development.

I trust you will not think I am too aggressive in making these suggestions to you. I will appreciate your thinking and any information which you might be in a position to give. Please consider this as a sincere interest in national welfare, particularly from the standpoint of environmental influences affecting health.

Sincerely yours,

MILO K. SWANTON,
Executive Secretary.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., May 23, 1961.

Dr. LUTHER L. TERRY,
Surgeon General, Public Health Service, Department of Health, Education, and Welfare, Washington, D.C.

DEAR DR. TERRY: The enclosed letter from a constituent, Milo K. Swanton, calls my attention to the proposed establishment of an Environmental Health Research Institute within the Public Health Service.

Mr. Swanton questions the advisability of providing facilities for another Federal installation in the Washington area. Instead, he suggests that the Institute be located in the Midwest in an area, such as Madison, Wis., which not only has the built-in advantage of being centrally located but also has outstanding research and educational institutions and facilities.

I would appreciate your comments on Mr. Swanton's proposal.

With kindest regards,

Sincerely,

ROBERT W. KASTENMEIER,
Member of Congress.

U.S. SENATE,
Washington, D.C., June 6, 1961.

Respectfully referred to:

CONGRESSIONAL LIAISON,
Department of Health, Education, and Welfare,
Washington, D.C.:

I hope that you will consider establishing the proposed Environmental Health Research Institute on the campus of the University of Wisconsin.

Thank you for your consideration.

WILLIAM PROXMIRE,
U.S. Senator.

U.S. SENATE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
June 23, 1961.

MRS. JIM C. AKIN,
Assistant Congressional Liaison Officer, Department of Health, Education, and Welfare, Washington, D.C.

DEAR MRS. AKIN: Enclosed is a copy of a letter and a newspaper clipping I have received from Mr. Robert G. Merrick, Baltimore, Md., regarding the possibility of Health, Education, and Welfare building the Environmental Health Center in Anne Arundel County.

Your advice and comments concerning the subject matter of this letter would be appreciated.

With best wishes and kindest regards, I am
Sincerely yours,

JOHN MARSHALL BUTLER,
U.S. Senator.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., June 23, 1961.

DR. LEROY E. BURNEY,
Surgeon General, Public Health Service,
Health, Education, and Welfare Building, Washington, D.C.

DEAR DR. BURNEY: I would appreciate any details available on the proposed National Environmental Health Center near Rockville, Md., which President Kennedy mentioned in his message to Congress on June 14.

Thank you for your courtesy and cooperation.

Sincerely,

CHARLES McC. MATHIAS, Jr.

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
September 5, 1961.

Hon. ABRAHAM A. RIBICOFF,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR SECRETARY RIBICOFF: Since Members of both the House and the Senate, in their separate committees, have expressed opposition to the construction of an environmental health facility in the Metropolitan Washington area, I would respectfully suggest that my State of West Virginia be considered for the establishment of this facility.

I have been told on fairly good authority that a few years ago an air pollution facility was being considered somewhere in the Ohio River Valley. I was as much surprised as anyone, therefore, when your Department came before the Appropriations Committee requesting money for the purchase of a site for a larger, more encompassing facility in the neighborhood of Germantown, Md.

The arguments used for the establishment of the facility in the Washington area are not soundly based. Permit me to point out that there are several areas in West Virginia where HEW scientists and technicians would feel completely at ease—college cities such as Beckley, Bluefield, Elkins, Morgantown, Charleston, and Huntington. Most of these cities have airports and other good transportation facilities. The cost of living in most West Virginia cities is far less than that experienced in the Metropolitan Washington area.

More important, however, is the fact that an environmental health facility in West Virginia would be close to sources endangering health: smoke pollution from steel mills and other manufacturing facilities, inplant chemical vapors, air pollution from coal-burning facilities, and water pollution from a variety of sources. This would make possible many kinds of on-the-spot testings, and would in other ways more expeditiously advance the science of environmental health.

I shall be happy to sit down with you, at your convenience, to discuss this matter at greater length, because I feel certain that the choice of West Virginia for the construction of the proposed HEW facility would find wide support in both Houses of the Congress, and with President Kennedy as well.

Looking forward to hearing from you, and with kindest regards, I am,

Sincerely yours,

ROBERT C. BYRD,
U.S. Senator.

U.S. SENATE,
COMMITTEE ON GOVERNMENT OPERATIONS,
September 8, 1961.

Hon. ABRAHAM RIBICOFF,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR ABE: I understand that there is a possibility of establishing the $70 million Environmental Health Research Center in the Midwest area.

I am glad to hear that this has been considered, and I hasten to point out the splendid facilities that we find in the State of Minnesota and particularly those connected with the University of Minnesota at Minneapolis, St. Paul, and Duluth. As you well know, the university has one of the outstanding medical centers in the world, and it would be most appropriate in keeping with the general policy of decentralization of our Government to place such an environmental center in conjunction with the University of Minnesota, so that there could be a free exchange of the personnel at the university.

I would appreciate your thoroughly reviewing this matter. If there is a possibility that Minnesota might be considered, I would like to arrange for a meeting to discuss this matter and to invite the officials of the University of Minnesota to participate.

Sincerely yours,

HUBERT H. HUMPHREY.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., October 30, 1961.

Dr. LUTHER TERRY,
The Surgeon General, Public Health Service,
Health, Education, and Welfare Department,
Washington, D.C.

DEAR DR. TERRY: We have been advised that plans are being considered for a proposed Environmental Health Research Center. We also understand that material has been presented by the authorities in North Carolina pointing out the advantages of locating the proposed Center in North Carolina. I shall not repeat the benefits available in North Carolina for such a facility, however, we do not believe a better location could be obtained, both from the standpoint of location and available competent personnel.

I sincerely trust that North Carolina will be selected as the location for this proposed Center.

With kindest regards and best wishes, I am,

Sincerely yours,

ALTON LENNON.

STATE OF NORTH CAROLINA,
GOVERNOR'S OFFICE,
Raleigh, February 5, 1962.

Hon. ABRAHAM RIBICOFF,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR ABE: Confirming our recent conversation in Washington, I am writing to let you know that we are most interested in having the Environmental Health

Center located in the North Carolina research triangle area. I am sure you are familiar with this area, and the cooperation and joint enterprise among Duke University, the University of North Carolina at Chapel Hill, and the University of North Carolina at State College, including the University of North Carolina Memorial Hospital and Duke Hospital.

If there is any additional information which you need on the research triangle, I will be very happy to supply it. This is no more than an hour from Washington, and I believe is an ideal location.

With best wishes always,

Sincerely,

TERRY SANFORD.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPPRESENTATIVES,
Washington, D.C., May 11, 1692.

HON. ABRAHAM RIBICOFF
Secretary, Department of Health, Education, and Welfare, Washington, D.C.

DEAR MR. SECRETARY: I wish to join other members of the North Carolina delegation in urging that the proposed Environmental Health Center be located in the research triangle area of the State of North Carolina.

I am sure our Governor and others have previously acquainted you with the many advantages our State has to offer, including the outstanding resources of academic and professional talent in the University of North Carolina, Duke University, and North Carolina State. This location would also be attractive from an economical point of view, as I understand State officials have offered to donate the land for the Center. Furthermore, construction costs would be considerably less than in the area of the Nation's Capital, as would the cost of living.

I, therefore, hope that you will give serious consideration to the above location in making plans for the proposed Environmental Health Center.

With kindest regards, I am,

Very sincerely yours,

RALPH J. SCOTT.

STATE OF NORTH CAROLINA,
GOVERNORS OFFICE,
Raleigh, May 17, 1962.

The PRESIDENT,
The White House,
Washington, D.C.

DEAR MR. PRESIDENT: The Public Health Service of the Department of Health, Education, and Welfare proposes to build an environmental health research facility.

It is the present plan of the Public Health Service to place this facility in the Washington area, but this should not be done for numerous reasons.

Ideally it should be placed in the research triangle of North Carolina, between Chapel Hill with the University of North Carolina and its division of health affairs and medical school, Duke University and its medical school, and State College of the University at Raleigh with its agricultural and engineering schools and science departments.

We need this installation and we have the most to offer, and I would appreciate a chance to talk with you at your convenience.

With best wishes always,

Sincerely,

TERRY SANFORD.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C. June 19, 1962.

ROBERT ANDERSON, M.D.,
Deputy Chief, Bureau of States Services,
U.S. Public Health Service,
Washington, D.C.

DEAR DR. ANDERSON: I am enclosing a letter received from the chairman of the Charles County Economic Development Commission.

I am of course, interested in the possible location of your planned scientific research laboratory in the Fifth District of Maryland, and would appreciate being advised whether or not consideration has been given, or may be given in the future, to such a step. Please be assured of my desire to cooperate in any way possible, should this action be feasible.

With best wishes, I am,

Sincerely yours,

RICHARD E. LANKFORD,
Member of Congress.

STATE OF NORTH CAROLINA,
GOVERNOR'S OFFICE,
Raleigh, July 13, 1962.

The Honorable JOHN F. KENNEDY,
President, the White House, Washington, D.C.

DEAR MR. PRESIDENT: Thank you very much for discussing the Environmental Health Center. Location of the center close to a university, reasonably near Washington, would enable the mission of such a center to be better realized.

Recruitment, training, and advanced studies available in a university community would greatly facilitate recruitment and training for the manpower requirements of the center.

Millions of dollars would be saved in construction costs if the facility were not built in Washington.

I hope you will decide that it should not be established in Washington.

If this is your decision, then I respectfully suggest the North Carolina research triangle (the University of North Carolina at Chapel Hill, Duke University at Durham, and North Carolina State College at Raleigh) as the most appropriate location.

Among other resources available, we have two engineering schools, two medical schools, the outstanding southern school of public health, an agriculture school, two forestry schools, three graduate libraries, departments in all of the biological, social, and physical sciences, mathematics, statistics, and other related disciplines.

We are close to Washington.

This will help strengthen the three university campuses, which are already totally adequate to support this facility.

There are no adverse political considerations, and the decision to place the center in North Carolina would be of tremendous advantage to our State, to your administration, and to mine.

In fact, I know of nothing which can be done which would be more helpful.

With best wishes always.

Sincerely,

TERRY SANFORD.

EXECUTIVE DEPARTMENT,
Annapolis, Md., August 16, 1962.

THE PRESIDENT,
The White House,
Washington, D.C.

DEAR MR. PRESIDENT: As you may know, officials of the Department of Health, Education, and Welfare have been studying the advantages of locating their proposed Environmental Health Center in Maryland. These officials have been working closely with county leaders, and local, regional, and State officials to develop information which will enable the Federal Government to choose that location which will best satisfy all the requirements for the installation as determined by the U.S. Public Health Service.

The latter agency has made surveys of many sites, taking into account, among other criteria, where present employees are now domiciled, proximity to headquarters of the parent organization from which they will receive direction, and convenience to related governmental facilities. They have arrived at a decision as to which Maryland sites will provide the most efficient operation for the new facility.

My interest in this project is intensified by my awareness of the Environmental Health Center's potential importance to Maryland's further development as a science industry and research area. Science industry, already an important part of our economy, may well be the mainstay of Maryland's future growth.

You may therefore be assured of my strong personal interest in seeing that this Center is located in Maryland, and you can count on my cooperation and assistance in any way I can be helpful.

I shall very much appreciate anything you can do to see that the Department of Health, Education, and Welfare plans to locate this facility in Maryland are carried out.

Kindest personal regards and best wishes.

Sincerely,

J. MILLARD TAWES, *Governor.*

EXECUTIVE DEPARTMENT,
Annapolis, Md., August 16, 1962.

Hon. ANTHONY J. CELEBREZZE,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: As you know, officials of your Department have been studying the advantages of locating the proposed Environmental Health Center in Maryland. These officials have been working closely with county leaders and local, regional, and State officials to develop information which will enable the Federal Government to choose that location which will best satisfy all the requirements for the installation as determined by the U.S. Public Health Service.

The latter agency has made surveys of many sites, taking into account, among other criteria, where present employees are now domiciled, proximity to headquarters of the parent organization from which they will receive direction, and convenience to related governmental facilities. They have arrived at a decision as to which Maryland sites will provide the most efficient operation for the new facility.

My interest in this project is intensified by my awareness of the Environmental Health Center's potential importance to Maryland's further development as a science industry and research area. Science industry, already an important part of our economy, may well be the mainstay of Maryland's future growth.

I would like to call to your attention the enclosed resolution of our Maryland Economic Development Commission.

You may therefore be assured of my strong personal interest in seeing that this center is located in Maryland, and you can count on my cooperation and assistance in any way I can be helpful.

In addition, all of the agencies of the State, especially our Department of Economic Development, stand ready to work with your Department and local groups to facilitate the location of this important installation on the best possible site in Maryland.

Kindest regards and best wishes.

Sincerely,

J. MILLARD TAWES, *Governor.*

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., August 17, 1962.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare, Washington, D.C.

DEAR MR. SECRETARY: It has come to my attention that your Department is presently considering the location of your Department's Environmental Health Center in Maryland.

The Honorable J. Millard Tawes, Governor of Maryland, has expressed to me his great interest in having Maryland favorably considered as the location for this Health Center.

The selection of a Maryland site would be a great asset to our State, and I believe the proximity of the Maryland area to Washington is a significant point. Your serious consideration of this proposal would be personally appreciated.

With best wishes, I am,

Sincerely yours,

THOMAS F. JOHNSON, *Member of Congress.*

U.S. SENATE,
August 30, 1962.

DIRECTOR, LEGISLATIVE LIAISON,
Department of Health, Education, and Welfare, Washington, D.C.:

Respectfully referred for such consideration as the communication herewith submitted may warrant, and for a report thereon, in duplicate to accompany return of enclosure.

By direction of,

JOHN SPARKMAN, *U.S. Senator.*

RALEIGH, N.C., *August 29, 1962.*

Senator JOHN SPARKMAN,
Senate Office Building,
Washington, D.C.:

I understand a witness for the Public Health Service in a hearing yesterday before Deficiencies Subcommittee of the House Appropriations Committee testified that there was no record in the files of the Public Health Service showing offer of free sight in North Carolina's Research Triangle Park for proposed Environmental Health Center. Offer was transmitted personally by me in writing to Secretary Ribicoff in March. Later, offer in writing was submitted to the Deputy Director of the Budget Elmer Staats. Sincerely believe North Carolina's Research Triangle Park is best available site for proposed Center at the least cost to the Federal Government. Would greatly appreciate your support in this matter.

With best wishes always,

Sincerely,

TERRY SANFORD, *Governor.*

STATE OF NORTH CAROLINA,
GOVERNOR'S OFFICE,
Raleigh, September 5, 1962.

Hon. ANTHONY J. CELEBREZZE,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: Following my telegram to you of August 29, this is to reaffirm the offer by the State of North Carolina of land at North Carolina's Research Triangle Park for the proposed U.S. Public Health Service's Environmental Health Center.

I am enclosing a signed statement covering the State of North Carolina's proposal, including the offer of the land.

As I said in the telegram, this offer of adequate land, without any cost to the Federal Government, was made in March to Secretary Abraham Ribicoff.

We sincerely believe that North Carolina's Research Triangle Park would provide the best possible site in the United States, at the least possible cost to the Federal Government, for the Environmental Health Center.

I trust that we may count on your support in this matter.

With best wishes always,

Sincerely,

TERRY SANFORD.

U.S. SENATE,
COMMITTEE ON COMMERCE,
September 13, 1962.

MRS. JIM G. AKIN,
Congressional Liason Office, Department of Health, Education, and Welfare, Washington, D.C.

DEAR MRS. AKIN: It is my understanding that Montgomery County is being considered for the site of the proposed Environmental Health Center of the U.S. Department of Health, Education, and Welfare.

Any favorable consideration given to support of choosing Montgomery County for the site would be greatly appreciated by me. I would also appreciate your advising me of the status of this situation.

With best wishes and kindest regards, I am,

Sincerely yours,

JOHN MARSHALL BUTLER,
U.S. Senator.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., October 3, 1962.

Hon. JOHN F. KENNEDY,
President of the United States,
The White House,
Washington, D.C.

DEAR MR. PRESIDENT: It is my understanding that the proposed establishment of a National Environmental Health Center at Rockville, Md., has been disapproved by the House Appropriations Committee.

I would like to respectfully suggest that some point in northeast West Virginia be considered for this project. It is my sincere belief that the eastern panhandle area of our State is highly suitable. It is located in the center of approximately one-third of the population of the United States. This section is free from metropolitan congestion, yet it is attractive and convenient to Washington and environs.

West Virginia's eastern panhandle is accessible by air, rail, bus, and by private vehicles, the last on arterial highways. Abundant land can be acquired at little expense. I am confident operating personnel, both skilled and unskilled, can be assembled in quantity, and housed with no difficulty. The year-round climate is unexcelled, and the environment is surpassingly beautiful. Probably no single spot in the Nation offers superior advantages for a project of this kind.

May I also point out that this project would provide a substitute for the Naval Radio Research Station at Sugar Grove, W. Va., the abandonment of which brought so much disappointment and chagrin to us. Our State can offer a good home—perhaps the best—to the proposed new National Environmental Health Center. In turn, it would be an important addition to our West Virginia economy. I would like to express my deep appreciation to you for any consideration which may be extended.

Thanking you, and with kind personal regards, I am,

Sincerely yours,

HARLEY O. STAGGERS.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., October 3, 1962.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: It has come to my attention that the location of the Environmental Health Center of the Public Health Service has not yet had an appointed location. In the district which I represent, there is a fine facility on the banks of the St. Johns River, up until recently called Navy Station, Green Cove Springs, Fla. The Navy is abandoning this facility, which is not far distant from the University of Florida Medical College and Jacksonville University and other important centers which might be helpful in the environment of such a health center. Since these facilities are surplus, they could be obtained without cost, upon your request. Please let me know if it would be appropriate to submit more detailed information on this subject. If so, I would appreciate any guidelines on preparation of an application which should be made.

With kindest regards, I am

Sincerely,

Charles E. Bennett, *Member of Congress.*

Congress of the United States,
House of Representatives,
Washington, D.C., October 4, 1962.

Dr. Luther L. Terry,
The Surgeon General, Public Health Service, Department of Health, Education, and Welfare, Washington, D.C.

Dear Dr. Terry: You are familiar, of course, with the action of the House Committee on Appropriations in disapproving the estimate for site acquisition and detailed planning of an environmental health center for the U.S. Public Health Service because of objections to the proposed site.

In the consideration of possible alternate sites, I believe it would be appropriate for your officials concerned to conduct a reconnaissance of the federally owned property near Front Royal, Va., known locally as the Old Army Remount Depot.

This property, consisting of approximately 4,000 acres, presently is in limited Federal use as a beef cattle research station and as the site of a small classified installation. Several of the existing buildings might be adaptable for auxiliary or service functions if the Environmental Health Center were located there.

Additionally, the location would seem to have the advantage of being within easy reach of Public Health Service Headquarters, while far enough removed from the Washington metropolitan area to overcome objections to further concentration of Federal activities in the metropolitan area. Front Royal is served by primary highways and, within a few years, will be served by Interstate Route 66, now under construction.

Messrs. Duncan C. Gibb and Robert E. Hayes, cochairmen of the Industrial Development Commission of Front Royal-Warren County, Va., would be happy to cooperate with your associates in any preliminary inspection of the so-called Old Army Remount Depot.

Sincerely yours,

Burr P. Harrison.

Jacksonville Area Chamber of Commerce,
Committee of One Hundred,
Jacksonville, Fla., October 5, 1962.

Subject: Environmental Health Center.

Mr. Boisfeuillet Jones,
Special Assistant to the Secretary,
Department of Health, Education, and Welfare,
Washington, D.C.

Dear Mr. Jones: Through the courtesy of the Honorable Charles E. Bennett, Member of Congress, our Committee of One Hundred of the Jacksonville Area Chamber of Commerce has been alerted to the proposed Environmental Health Center.

Our committee, composed of the leading businessmen in Jacksonville, invites your attention to the deactivated U.S. naval station facilities at Green Cove Springs, Clay County, Fla., immediately south of Jacksonville, Fla., as a suitable location for the proposed Environmental Health Center.

Enclosed is a brochure on Green Cove Springs and the above-mentioned U.S. naval station, along with our economic survey descriptive of Jacksonville, Fla., in capsule form for your consideration.

Our group will be glad to supply you with any additional data on this facility or the general area that you may require.

May we extend to you or the appropriate survey group a most cordial invitation to inspect this deactivated station at your convenience. Your courtesy in advising us of a proposed visit will be appreciated so that the proper officials can be alerted.

Sincerely yours,

Franklin G. Russell, *Chairman.*

JACKSONVILLE AREA CHAMBER OF COMMERCE,
COMMITTEE OF ONE HUNDRED,
Jacksonville, Fla., October 5, 1962.

Subject: Environmental Health Center.

Mr. JAMES A. SHANNON,
Director, National Institutes of Health,
Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SHANNON: Through the courtesy of the Honorable Charles E. Bennett, Member of Congress, our Committee of One Hundred of the Jacksonville Area Chamber of Commerce has been alerted to the proposed Environmental Health Center.

Our committee, composed of the leading businessmen in Jacksonville, invites your attention to the deactivated U.S. naval station facilities at Green Cove Springs, Clay County, Fla., immediately south of Jacksonville, Fla., as a suitable location for the proposed Environmental Health Center.

Enclosed is a brochure on Green Cove Springs and the above-mentioned U.S. naval station, along with our economic survey descriptive of Jacksonville, Fla., in capsule form for your consideration.

Our group will be glad to supply you with any additional data on this facility or the general area that you may require.

May we extend to you or the appropriate survey group a most cordial invitation to inspect this deactivated station at your convenience. Your courtesy in advising us of a proposed visit will be appreciated so that the proper officials can be alerted.

Sincerely yours,

FRANKLIN G. RUSSELL, *Chairman.*

STATE OF NORTH CAROLINA,
BOARD OF CONSERVATION AND DEVELOPMENT,
Raleigh, October 8, 1962.

President JOHN F. KENNEDY,
The White House,
Washington, D.C.

DEAR PRESIDENT KENNEDY: One of the great paradoxes of all times: The more you do for people, the more they resent you.

Governor Sanford, one of North Carolina's greatest, spends every minute completely and unselfishly dedicated to the people of this State. His vision and understanding place him far ahead of the citizens (examples: His educational program, which is unpopular, will pay its dividends many years in the future; his early recognition and support of you for President, at first unpopular, has paid its dividends in your greatness).

All this is to say, Mr. President, that the Department of Health, Education, and Welfare's proposed Environmental Health Research Institute should by all reason be located in North Carolina. The most important reasons are:

1. A beautiful site has been offered, located in the North Carolina research triangle. A site accessible to all types of transportation—air and ground. A site that is bordered by the University of North Carolina at Chapel Hill and Raleigh, and Duke University. A site in an area of no congestion. A site that is not to far removed from Washington, D.C. A site that would be conducive to happy living conditions for all employees.
2. North Carolina's people have shown by hard work and sacrifice that they are going to help themselves and have, as a result, become the leader of the South. This should merit some Federal investment.
3. Governor Sanford deserves this for his people not as a reward, but as recognition of his hard work and unselfish service.
4. No possible objections to location of facility in North Carolina. Everything in its favor.

If you read this, Mr. President, I hope you are still with me, for I want you to know I thank God for your direction of this great land of ours.

We people in North Carolina are fortunate. We have Governor Sanford and President Kennedy guiding our destinies.

DR. MOTT P. BLAIR.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., October 9, 1962.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: My colleague, the Honorable Charles E. Bennett of Florida, has written you recently concerning the location of the Environmental Health Center of the Public Health Service. I shall have the honor of representing the area in Clay County that Congressman Bennett now so well represents as of the 1st of January, next year. I want to join most enthusiastically with Congressman Bennett in urging you to consider the fine facility we have on the St. Johns River, up until recently called Navy Station, Green Cove Springs, Fla.

As Congressman Bennett pointed out, the Navy is abandoning this facility, which is not distant from the University of Florida Medical College and Jacksonville University, which institutions, I know, would be helpful in the environment of such a health center.

I want to emphasize that the facilities there are surplus and other environmental facts make this an excellent location for the Environmental Health Center.

I shall be delighted to cooperate with Congressman Bennett and citizens of the Green Cove Springs, Fla., area to give you any detailed information about our facilities there; and along with Congressman Bennett, I would appreciate any further information that you can give us that would be helpful in pursuing this matter.

With kindest regards, I am,

Sincerely,

D. R. MATTHEWS, *Member of Congress.*

U.S. SENATE,
COMMITTEE ON FINANCE,
October 10, 1962.

Hon. ANTHONY CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR SECRETARY CELEBREZZE: I understand that consideration is being given to placing the proposed HEW Environmental Health Center at the site of Green Cove Springs Naval Base in Green Cove Springs, Fla. I believe you have correspondence relative to this matter from Congressman Charles Bennett and others.

This letter is simply to let you know that I feel Green Cove Springs would probably make an excellent site for such a health center and I will be most pleased to see it located there.

With best regards,

Sincerely,

GEORGE A. SMATHERS, *U.S. Senator.*

STARKE, FLA., *October 15, 1962.*

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. CELEBREZZE: I am writing to you in regard to a facility that has been abandoned by the Navy at Green Cove Springs, Fla., which, in my estimation, would make an ideal site for the Environmental Health Center of the Public Health Service.

This facility is located on the historic banks of the St. Johns River in one of the finest communities in the State of Florida and it is a town that needs a facility of this type. They have an abundance of labor, it is close to Jacksonville, close to the University of Florida Medical Center, the citizens will give you 100 percent cooperation, and, last but not least, it is a democratic town in a democratic community.

Since the Navy has declared this property as surplus, it has created lots of unemployment. If you will establish this facility there, it will give northeast

Florida something they need to stimulate employment and I do not think you can look the entire United States over and find a comparable location in saving the taxpayers millions of dollars.

Thanking you very much for favorably considering this location, and with best regards, I remain,

Sincerely yours,

CHARLEY E. JOHNS,
State Senator, 15th District.

U.S. SENATE,
COMMITTEE ON LABOR AND PUBLIC WELFARE,
Washington, D.C., October 17, 1962.

Hon. JOHN F. KENNEDY,
President of the United States,
The White House, Washington, D.C.

DEAR MR. PRESIDENT: I am pleased to join with other members of the West Virginia delegation in Congress in urging that our State be considered as the site for the proposed National Environmental Health Center.

Since the Public Health Service would undoubtedly desire to locate the Center near the Nation's Capital, I suggest that the eastern Panhandle of West Virginia be studied as a possible location. This is an attractive area, convenient to Washington yet free from metropolitan congestion. There is a surplus of skilled and unskilled labor which could be utilized in a project of this type.

It will be deeply appreciated if you will direct the Public Health Service to send a survey team into the above-mentioned area to determine its suitability for the proposed project.

Sincerely,

JENNINGS RANDOLPH.

HOUSE OF REPRESENTATIVES,
Washington, D.C., October 24, 1962.

Dr. LUTHER TERRY,
Surgeon General,
Public Health Service, Washington, D.C.

DEAR DR. TERRY: Thank you for your kind reply of October 22 to my letter of October 4 suggesting that the Public Health Service consider the old Army Remount Depot near Front Royal, Va., as a possible site for the proposed Environmental Health Center.

I have noted your reply carefully, and I hope you will keep this possible alternate site in mind in the event the responsible committees of the Congress do not concur in the location of this facility in the immediate environs of Washington, D.C.

Sincerely yours,

BURR P. HARRISON.

HOUSE OF REPRESENTATIVES,
Washington, D.C., October 26, 1962.

Hon ANTHONY J. CELEBREZZE,
Secretary of Health, Education, and Welfare,
Department of Health, Education, and Welfare, Washington, D.C.

DEAR MR. SECRETARY: Thank you for your October 24 letter in which you say you will be pleased to provide any additional information I might wish about the Environmental Health Center and its possible location at Green Cove Springs, Fla. I realize from the enclosure in your letter that the Department has decided for its purposes the District of Columbia is the best location or somewhere in the immediate vicinity. However, since the Appropriations Committee has seemed to wish to look at this matter further, I am in a position of wanting to do what I can appropriately do to present the matter as fully as I can in accordance with my October 3 letter to you. Therefore, I would appreciate it if you would have someone send me a letter telling me what criteria and what forms of application would be best in presenting the case for Green Cove Springs, even though it does not seem very hopeful.

Thanking you and with kindest regards, I am,

Sincerely,

CHARLES E. BENNETT,
Member of Congress.

MILWAUKEE ASSOCIATION OF COMMERCE,
December 21, 1962.

Hon. ANTHONY CELEBREZZE,
Secretary, Health, Education, and Welfare, Washington, D.C.

DEAR SECRETARY CELEBREZZE: You have already received communications from the common council of our Milwaukee city government and the Wisconsin State Department of Resource Development regarding the advantages which our own local Midwest area can offer your agency by way of a desirable location for the new Environmental Health Center which you are planning.

In order to further emphasize why Milwaukee would be a logical site for your new center, we are sending you under separate cover a portfolio of exhibits and statistical summaries which outline the "plus factors" which our community can make available to you.

Furthermore, we would like to place at your disposal the special services of our association's business research division which has developed much specialized information and economic data about Metropolitan Milwaukee. We presume that your Agency has compiled a list of prerequisites with which any qualifying community must conform. Can you let us know what these essential factors must be—whereupon we will have our research department assemble specific information about Milwaukee relative to your designated requirements.

At the present time there is being developed here in this area a new activity called Wisconsin-Milwaukee Research Council. The primary purpose of this new undertaking is to sensitize both our institutions of higher learning and the industrial segment of our State's economy to the need of integrating their respective research activities and resources. The creation of this council has developed a new spirit of cooperation and a new interest in scientific research throughout Milwaukee and Wisconsin. A new attitude of alertness to the significance and to the value of scientific endeavor has been born. We sincerely feel that your new program could complement this awakening environment of enthusiasm for research—and at the same time, your organization could exploit this receptive attitude most favorably.

May we look forward to receiving from you at your convenience a "bill of particulars" identifying the precise data you would like to have us compile?

Sincerely,

CHAS. G. CRABB,
Manager, Industries Division.

U.S. SENATE,
COMMITTEE ON AGRICULTURE AND FORESTRY,
December 26, 1962.

Hon. ANTHONY CELEBREZZE,
Secretary, Health, Education, and Welfare,
Washington, D.C.

DEAR MR. CELEBREZZE: I am writing to express my interest in the location of the Public Health Service Environmental Health Center in Wisconsin.

Establishing this center in Wisconsin will not only be in keeping with the House of Representatives suggestion that the facility be located elsewhere than Washington, but will also bring more Federal payroll to Wisconsin, whose per capita Federal civilian payroll is $27.75, lowest of all 50 States.

Your consideration of this will be appreciated by me.

Sincerely,

WILLIAM PROXMIRE, *U.S. Senator.*

HOUSE OF REPRESENTATIVES,
Washington, D.C., December 27, 1962.

Surg. Gen. LUTHER L. TERRY,
Public Health Service,
Department of Health, Education, and Welfare,
Washington, D.C.

DEAR DR. TERRY: I am enclosing a resolution adopted by the Milwaukee Common Council recently, urging the U.S. Public Health Service to consider locating its Environmental Health Center in Milwaukee.

To the recommendation of the common council, I would like to add my own request that Milwaukee be chosen site of the Center. Please let me know if

Milwaukee is being considered as a possible site and when the decision on the location of the Center is to be made.

With best wishes, I am,

Yours sincerely,

CLEMENT J. ZABLOCKI, *Member of Congress.*

U.S. SENATE,
Washington, D.C., January 18, 1963.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: I am enclosing herewith a copy of a statement made by me on January 17 in which I express my views concerning a proposal to build an Environmental Health Center in the area of Rockville, Md., and also my deep concern relative to the future status of the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio.

Sincerely yours,

FRANK J. LAUSCHE.

U.S. SENATE,
Washington, D.C., January 28, 1963.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. SECRETARY: I received your letter of January 24 written with respect to the National Center for Environmental Health for the Public Health Service contemplated for construction and establishment in the metropolitan area of Washington, D.C.

I noted your statement:

"Since becoming Secretary I have reviewed this matter and I concur in the need for a Washington, D.C., location."

I merely want to repeat that a decade or more ago a decision was made that there should be a decentralization of activities from Washington into other areas of the country both for economic and safety purposes. That judgment of decentralization is now being abandoned and function after function is being brought back into the metropolitan area of Washington.

I respectfully submit to you that it is wrong from the standpoint of economics, safety, and efficient service.

I was glad to note from your letter, however, "that the Public Health Service intends to continue the use of the Robert A. Taft Sanitary Engineering Center in Cincinnati as an engineering and development center for all of the environmental health programs."

Sincerely yours,

FRANK J. LAUSCHE.

U.S. SENATE,
Washington, D.C., February 2, 1963.

Hon. ANTHONY J. CELEBREZZE,
Secretary, Department of Health, Education, and Welfare,
Washington, D.C.

MY DEAR MR. SECRETARY: I write to urge that the city of Milwaukee be considered as a site for location of the new Environmental Health Center of the U.S. Public Health Service.

Enclosed is a resolution enacted by the Common Council of the City of Milwaukee in this regard.

Your favorable consideration of this request will be greatly appreciated.

Thanking you, I am,

Yours very truly,

GAYLORD NELSON, *U.S. Senator.*

(The following telegram sent to the two Maryland Senators and each Member of the House of Representatives from Maryland.)

February 25, 1963.

I would like to call your urgent attention to recent developments in the location of the proposed HEW Environmental Health Center which is now before Congress for appropriation of funds for planning and site acquisition. A location in Montgomery County has been approved by the appropriate planning bodies consistent with the recommendations of the Surgeon General's Committee on Environmental Health Problems and in accordance with governmental prescribed procedures for site selection. Recently several States have made competitive offers of free land in order to divert this Environmental Health Center from Maryland. The Department of Health, Education, and Welfare wishes to locate this facility in the Washington area in order to take advantage of proximity to the Atomic Energy Commission, the National Institutes of Health, the Bureau of Standards, the headquarters of the Public Health Service and other related facilities required for the effective coordination of the environmental health program. To meet the competition of other States and to demonstrate Maryland's desire to locate this installation here, the State of Maryland is offering a choice of four appropriate sites consisting of State-owned land in the Washington area. If none of these sites fulfill requirements, the State of Maryland stands ready to provide an additional site to match any competitive offer. I urge you to support Maryland's all-out effort to hold this installation which involves 800 of the present staff of the Public Health Service already working in the Washington area and residing in Montgomery and Prince Georges Counties and which has promise of providing a future multi-million-dollar payroll.

(Signed) J. Millard Tawes,
Governor.

Mr. Laird. That is all.

Mr. Fogarty. Mr. Michel.

REGIONAL RESEARCH FACILITIES

Mr. Michel. Doctor, how many of these regional stations are there currently in Environmental Health?

Dr. Anderson. Currently, we have, as I recall the figure, 19. Would you be interested in the list, Mr. Michel?

Mr. Michel. Yes; my next question was, where are they? You can just supply that for the record.

Dr. Anderson. All right, sir.

(The information follows:)

Existing Laboratory Facilities Now in Operation, Environmental Health

Alabama: Montgomery, Southeast Radiological Health Laboratory
Alaska: Anchorage, Arctic Health Research Center
Georgia: Atlanta, Pesticide Laboratory
Illinois: Chicago, Great Lakes-Illinois River Basin Laboratory
Massachusetts: Winchester, Northeast Radiological Health Laboratory
Maryland: Rockville, Radiological Health Laboratory
Michigan: Grosse Isle, Detroit River-Lake Erie Laboratory
Nevada: Las Vegas, Southwest Radiological Health Laboratory
New Jersey: Metuchem, Raritan Bay Laboratory
Ohio:
    Cincinnati, Robert A. Taft Sanitary Engineering Center
    Cincinnati, Occupational Health Field Station
    Cleveland, Great Lakes-Lake Erie Laboratory
Oklahoma: Ada, Ark-Red Laboratory
Oregon: Portland, Pacific-Northwest Laboratory
Pennsylvania: Philadelphia, Delaware River Project Laboratory
Utah:
    Salt Lake City, Occupational Health Field Station
    Salt Lake City, Colorado River Laboratory

Washington:
  Purdy, Shellfish Sanitation Research Laboratory
  Olympia, Field Laboratory

Mr. Michel. How many more are in the area of being authorized and contemplated for the future?

Dr. Anderson. Well, with regard to authorization, there were authorized seven water pollution control laboratories.

Mr. Michel. Have all those sites been picked?

Dr. Anderson. No, sir, they have not.

Mr. Michel. How many have not?

Dr. Anderson. One.

Mr. Michel. Will you supply where those six sites will be for the record?

Dr. Anderson. Yes, sir.

(The information follows:)

Sites of Water Pollution Control Laboratories

Northeast: Boston, Mass.
Middle Atlantic: Not selected.
Southeast: Athens, Ga.
Midwest: Ann Arbor, Mich.
Southwest: Ada, Okla.
Northwest: Corvallis, Oreg.
Alaska: Fairbanks, Alaska.

Mr. Michel. And the general area where no decision has been made, is where?

Dr. Anderson. The Mid-Atlantic States.

HISTORY OF ENVIRONMENTAL HEALTH PROGRAMS

Mr. Michel. How long have we had any kind of a program in environmental health? It would date back to what year?

Dr. Anderson. It would probably date back to as far back as 1870 or so. In the early years of the history of Public Health, the concern with the environment was with regard to the bacterial diseases that were transmitted through water, by food and milk.

Then as time went on we began to see that there were certain diseases—and the Public Health Service became active in them—that were the result of exposures to chemicals. For example, dermatitis effects, and then cancers of one sort or another. And so this, in a sense, is the history of the Public Health Service.

One of the pioneers of the Public Health Service did in 1912 the first water pollution survey of the Missouri River near Kansas City. He pointed out the time would come when the pollution problems of that river would be tremendous in terms of the population that he anticipated along the Missouri River, between Kansas City and St. Louis.

His prophecy certainly came true. It was shortly after his report on that work that the Kansas State Board of Health installed the first sewage treatment plant to be installed in this country to take care of a town's sewage.

So environmental health are words that we use today, to describe an activity which through the years, has been called sanitation, hygiene, or variations of those words.

Today, however, we mean in using this term the broad control of pollution and contamination and the prevention of exposures to chemical and physical agents. Interestingly, one of the concerns in our country today is the noise produced by the jet planes. People living in the environs of jet airports are pretty vocal about this sort of thing.

These are the new kinds of problems that we are working on today, in addition to trying to keep pace with the virological problems, the chemical problems, and the bacterial problems of the environment.

ENVIRONMENTAL HEALTH PERSONNEL AND EXPENDITURES

Mr. Michel. In this area, in the current year 1963, how many people are engaged in environmental health?

Dr. Anderson. In the Public Health Service?

Mr. Michel. Yes.

Dr. Anderson. Approximately 3,500.

Mr. Michel. And the total amount of expenditures, moneywise, is what, for the current year 1963?

Mr. Bersano. It is $155,629,000. Of that, $90 million is for the waste treatment grants.

Mr. Michel. And in the year 1964, there is contemplated to be how many people in this area of environmental health?

Mr. Bersano. 3,619.

Mr. Michel. With a total expenditure of how much?

Mr. Bersano. $179,700,000.

Dr. Anderson. On that last figure, Mr. Michel, there is an additional $10 million, in other words, a total of $100 million, for sewage treatment grants.

Mr. Michel. Then, would you supply for the record, what those same comparable figures are for personnel and total expenditure for the 3 years prior to the current fiscal year 1963: for 1962, 1961, and 1960; so that over a 5-year period, we can see in total figures, personnel and money, what happened in this area?

Dr. Anderson. Yes, sir.

(The figures follow:)

Environmental Health Programs

Total employment and funds for 1960, 1961, and 1962

	1960	1961	1962
Positions	1,311	2,020	2,783
Funds	$63,177,900	$80,807,560	$129,751,000

Mr. Michel. One of the reasons for having an Environmental Health Center is to coordinate these far flung, far reaching, strung out activities throughout the Government, in this area?

I would like to think that when one recognizes that there is a disconnection, somewhat of a disarray, a duplication, and an overlapping, that coordinating of these activities would bring about some economies; but the more we get into this thing, and the more it is coordinated, the bigger it gets, it appears to me.

What is the answer?

Mr. Laird. That's what has happened to the Department of HEW. They have reached the point now that they can't even find a letter down there. That is a fact. Four years ago, this Department was much smaller, and reasonably efficient, but they can't find a piece of mail down there, now. It was proven right here today.

Dr. SHANNON. This is not my appropriation. However, this is one I am deeply interested in, and deeply concerned with.

I would like to suggest to the committee that they put too much emphasis on the proposed center as one which will yield coordination to activities in environmental health. It will do this, but in terms of relative importance the proposed center is important because it will permit the expansion of research activities heretofore inadequately covered. The Public Health Service and the American science is so far behind the environmental health problem that is with us today, that there are very broad areas of scientific activities that must be undertaken.

This is an age of chemicals. At the present time, an untold number of new chemicals are poured in our air, in our water, and are added to our food, without adequate knowledge of what the long-term consequences of these will be to human health. In point of fact, there is little basic knowledge available which defines the effects of long term, lifetime exposure, to trace amounts of a very large number of very potent chemicals.

Now, I would be certain, if Dr. Anderson had not been distracted by the problem of coordination, he would have told you that in the centralized laboratory, and one of the main reasons for this Environmental Health Center coming into being, is the need to develop what this country has not developed before, a broadly based fundamental activity in the field of long-term chemical intoxication. Chemical intoxicants are all pervasive industrial problems; our water, our air, our food, our drugs are all in an equally vulnerable position. We are certain that our controls are inadequate but we do not have the fundamental knowledge to develop realistic ones.

On the other hand, in this situation, we have laws that seek to control the situation but in point of fact, these laws are unrealistic, being quite contrary to scientific capability.

The Dulaney amendment generally precludes the distribution of food and cosmetics in interstate commerce if the mix contains chemicals that have been shown to cause cancer in any animal. Technology has advanced so that we can now measure compounds of such minute concentrations that the strict application of this amendment could result in the removal of certain important foods from general availability.

I don't look at this new center as being one that will limit the expenditure of funds. This center is going to cost money. It is going to cost a great deal. And I think Dr. Terry's estimate of the long-range environmental health expenditure is a lot closer than Dr. Anderson's. I think the American public is going to demand controls be imposed that preclude the individual entrepreneur from unduly polluting our air, our food, and our water. I think we have come to the breaking point here. We just about had it.

I wish to make a strong plea for not looking at this Center as a money-saving device; and the functions as I see it cannot be performed with computers. One must have adequate information to put in a computer in order to obtain an answer. If we have inadequate laboratories to obtain the information we will have no answers.

Mr. Lesinski. Mr. Chairman, if I may.

Mr. Fogarty. Mr. Michel, do you yield?

Mr. Michel. I will be glad to yield to my colleague.

Mr. Lesinski. I am in full accord with the remarks the gentleman has made. I cannot argue with you. It is important, and I know that the health of America is important, and the future Americans are going to be in worse shape than we are because of the very things you are talking about. I am fully aware of that; but it seems that many of the things you say are going on now in private industry, and other places, and I am in concurrence with the gathering together of all information to find out what the score is.

Now, just to throw money away, I cannot see it.

Dr. Shannon. Well, I am not interested in increasing my tax contribution to the Federal Establishment.

Mr. Fogarty. Did you agree with this statement that you are throwing money away?

Dr. Shannon. No. The Congressman says he doesn't want to throw money away. I say, neither do I, but I insist these studies, such as we are discussing, are not throwing money away. I think that the establishment of a center for building up essential knowledge makes for efficiency.

Sir, I might point out that you can find—and this is a long-term, smoldering concern on my part—that when Dr. Scheele was nominated for his third term, he received a memorandum covering the subject we are discussing today, that did not say much more or less than I have said today.

I think it is a frustrating experience to have scientists and technicians and technologists, who are quite capable of doing an essential job, and having the program held up, as this one has been held up, fully 2 years, arguing about what I consider to be the peripheral things rather than the central issues.

COORDINATING INSECTICIDE PROGRAMS

Mr. Michel. I appreciate your observations, Dr. Shannon. In our Agriculture Subcommittee, we are attempting to eradicate the fire ant, and those chemicals that are used to eradicate the fire ant bring about another problem. Those interested in preserving wildlife such as the Izaak Walton League express the view that it is unconscionable for us to use chemicals as we do. We have a real difficult decision to make then to eradicate one danger on the one hand without endangering wildlife and human life on the other.

Dr. Anderson. I would like to point out to the committee that this proposal here represents one aspect of our effort to get going in this area, and when we come to the operational part of the budget, there is a new item which Dr. Terry mentioned, called Environmental health sciences, which begins to equip us to attack some of these problems which Dr. Shannon has mentioned.

Mr. Lesinski. Mr. Chairman, one final question.

An article appeared in the paper, in the Washington paper, some weeks ago. I don't recall the details now, but I believe it was in Norfolk, Va., or Charleston, where the Agriculture Department, because of some insect, wanted to spray the whole area. The people rebelled, and they held back by a fluke, by saying that they were going to seed the ground with some chemical—and then sprayed the area anyway.

Now, do you get into this problem between the Agriculture Department, and people putting up opposition to the spraying of insecticides, and so forth?

Dr. ANDERSON. May I answer?

Mr. FOGARTY. Either one.

Dr. ANDERSON. A year and a half ago, Mr. Lesinski, the Secretary of the Department of Agriculture, invited the Secretary of HEW and the Secretary of the Department of Defense and the Secretary of the Interior, to join with him in establishing a Review Board which would look at the programs which the Government sponsors, in which insecticides and pesticides are used, to look at them from the standpoint of the purpose of the program, the possibility of its being achieved, and to look at them from the standpoint of the possible adverse effects, which might be adverse upon the objectives of the other departments.

This Board was set up by the four Secretaries. We have been reviewing the governmental programs in which insecticides and pesticides are used, to see that the programs would be operated on the basis of knowledge that is available—or reasonable extensions of that knowledge—in such a way that damage would not be done to fish, wildlife, plantlife, and people's health.

I am a member of this Board. It is becoming increasingly clear to those of us who sit on that Board, that the research to produce the kinds of facts which would answer the questions that we are raising, as we review these programs, in many instances, has not been done. We are just now beginning to find out for example, what the effects of insecticides are upon reproduction of some of the species of wildlife. We know the acute effects of high-levels, but what are the low-level, long continued exposure effects that birds and fish and people experience, when they take in small quantities of these insecticides, and store them. Research has not been done, and today, it is being done on a very minimal scale. From our health interest, this is one of the kinds of problems we want to get at, in what we call environmental health.

Mr. LESINSKI. I have elm trees in my back yard. I never spray them, but the elm disease is around the area. My ants take care of them pretty well and for security, I have lindens and maples growing there, so if the elms do go, I have some shade trees left over; but spraying, I observe with caution because of the possible aftereffects. You can never tell. Poisons in food, that is what I am concerned about, not spraying my trees.

That is all, Mr. Chairman.

Thank you, Dr. Anderson.

NEED FOR BASIC RESEARCH FACILITY

Mr. FOGARTY. Dr. Anderson, this has certainly been pushed around, but as you know, I have been sponsoring a National Environmental Health Center for 3 or 4 years.

Dr. ANDERSON. Yes, I appreciate it.

Mr. **Fogarty**. And the main reason was because every committee that was set up to study it, said it was necessary and I don't see how all the experts in this field could be wrong.

I remember, Dr. Shannon, 4 or 5 years ago, you were making the strongest kind of pleas for spending more time and effort in real basic research, and there has been an adjustment of the NIH program as a result. I think that perhaps a lesson has been learned because of the research activities of the NIH, and that the same type of emphasis is going to have to be placed on basic research in some of the other programs.

Is that a fair analysis?

Dr. **Shannon**. Yes, sir.

Mr. **Fogarty**. Now, every committee that has been appointed has recommended that a national center be established.

Dr. **Anderson**. Yes, sir.

Mr. **Fogarty**. Also, isn't it true that Dr. Gross is from North Carolina?

Dr. **Anderson**. Dr. Gross is from North Carolina.

Mr. **Fogarty**. He is in this research triangle, between Duke and North Carolina——

Dr. **Anderson**. And North Carolina State.

Mr. **Fogarty**. And it was his recommendation that it be placed in this particular area.

Dr. **Anderson**. He made the recommendation that the headquarters should be in the Washington area.

Mr. **Fogarty**. The President's Scientific Advisory Committee has suggested it.

Dr. **Anderson**. Yes, sir.

EFFECT OF ELIMINATING ENVIRONMENTAL HEALTH ACTIVITIES

Mr. **Fogarty**. There are Members of Congress who want this appropriation left out, of course; who don't want this established in the first place, whether it be here or anyplace else, and there are some Members of Congress who would like to see the appropriations in the fields of air pollution, and water pollution, eliminated. Some would go that far.

What would happen if we just eliminated all appropriations in the field of air pollution and water pollution, and said, "Let private industry or somebody else take care of it."

What would be the result?

Dr. **Anderson**. I think that the water and the air and the land would become such that not only would people not want to live on such land or near such water or breathe such air, but they would actually experience severe crippling, and may be life-taking health effects.

For example, work done in the air pollution program in the last year, has revealed that in certain cities, at times when air pollution is high, people who have difficulty in breathing, experience much greater difficulty in breathing, and experience it to the point where they have to go to their doctors, and some of them even have to be hospitalized in order to receive relief.

Dr. Terry cited the episode in London, where the smog this last December was so severe that there were deaths.

Mr. Fogarty. He did not say how many deaths. I think I read that there were 500 or 600 attributed to this smog in London.

Dr. Anderson. As closely as I recall, and you can ask Mr. MacKenzie when he comes before you for the exact figures, something less than a hundred died on the streets immediately at the time of the episode. This is the potential that we are up against, and there isn't going to be any relief in sight unless we bear down through research upon control measures, and control measures that are effective.

If you look at the projections for population growth, going up well over 200 million in a very few years, if you look at the places where the population is going to grow, and see the density of population that is going to occur, and if you look at the energy that the country is going to be using in industrial processes, and then if you look at the new kinds of technical processes that are used—we are using metals and chemicals and fuels that we never used before in our industrial processes, in our daily life processes—there is no question but that man's exposure to his environment is going to be much more intimate, and he is going to be exposed to things that he has never been exposed to before. They are not like viruses or bacteria where you can take a vaccination and get protection. There are no drugs that you can treat them with. The only solution is prevention through a vigorous control program based upon sound research so that you know the control that you are doing is going to be effective, because control is going to be expensive.

Mr. Lesinski. Also, I am sorry, one more further point. The transfer in plant life, trees, of carbon monoxide into oxygen—in other words photosynthesis and as your land area depletes, in proportion to the population, there is the real trouble.

Dr. Anderson. Unfortunately, this is one of the other consequences of air pollution.

Mr. Fogarty. What do you think, Dr. Shannon, would be the consequences of just wiping out all appropriations in the field of water pollution and air pollution?

Dr. Shannon. I think Dr. Anderson has stated a fair case. I think that basically we are a Nation of entrepreneurs, which is good. We want it this way, but somebody has to develop the rules within which we operate. When an individual deals with a matter that is potentially obnoxious or dangerous to his neighbor, some control must be exercised. This is why we have traffic laws. All of us become a little impatient when we have to slow down to 15 miles an hour, in a zone where there are no automobiles, but on balance, there has to be a yes or no. This is nothing less than a control measure. I think we now have to have comparable controls for things of a toxic nature. The general problem dates back to the midthirties and since that time the pace of introduction of new chemicals has increased greatly. We can no longer maintain a lackadaisical attitude, where anybody may introduce into our environment any noxious chemical, simply because there are not any overt, obvious, immediate effects.

And this is the present situation today.

Mr. Fogarty. This is something that creeps up on people unless something is being done about it, and private industry just hasn't been able to do the job.

Dr. SHANNON. I really think the complexity of these problems is such that if you require that industry do all these things, you will drive out small industry. Industrial development will be left to the very large complexes that can afford to run the very large research operations that are required for studies in this field. I look on this as control on the one hand, but the same type of information really will free up many industries. Sound information makes possible freedom on the one hand and rational control on the other, and I think when viewed in this light it is a very normal Federal operation. This cannot be done on the State or municipal level.

I would also point out that you have already examples of population movement from areas of high air pollution. I think this could happen in this country. I hold no brief for these large metropolitan complexes, but I would hate to see that it be determined that these are no longer feasible, simply because of air pollution.

Mr. FOGARTY. Now, before we go on to the other projects, is there anything else you want to say about the Center, Doctor?

Dr. ANDERSON. No.

Mr. FOGARTY. Dr. Terry, or anybody else?

Dr. TERRY. No.

RELOCATION OF NIH LIBRARY

Mr. FOGARTY. Now, you are asking for $900,000 to relocate the NIH Library. With the National Library of Medicine right on the grounds, why do you need another library?

Dr. SHANNON. Can I speak to that?

Mr. FOGARTY. It is a sizable sum of money for relocating such an activity.

Dr. SHANNON. That is true, but the NIH Library is a working library and is primarily one for current reading of periodicals and literature research in relation to ongoing research. The National Library of Medicine should be viewed as a broader general resource. At the present time, our library is dispersed over three wings in the Clinical Center. Basically, a poor judgment was made during the initial construction of the Center in placing the library.

Extremely valuable clinical and laboratory space was taken up by the library, and a judgment was made that the flow of scientists in and around the reservation was such that this probably was the most convenient place for the library, and would make it most accessible. This has turned out not to be so.

Mr. FOGARTY. Just where do you plan to locate it?

Dr. SHANNON. Well, it would be back of the Center, adjacent, on the ground floor, to the cafeteria.

Mr. SEGGEL. Back on this side, between the two wings.

Dr. SHANNON. We put it as close as possible to the ground so that it doesn't require any elevators. The indirect effect of such a move is tremendous in that this opens up three wings of laboratory space to relocate some of our operations.

You may recall, Mr. Fogarty, when the Center was first designed, the Mental Health Institute was to handle mental health and neurology and there was not a space allocation for neurology as such at that time. Congress established the Neurological Institute quite late in the development of the building, and neurology has suffered from a lack of an ability to satisfy their logical needs.

Now, we would propose to take the north wall, which now consists of stacks and reading rooms, and convert this in a clinical type of laboratory facility with ready access to patients. The two outer wings will be developed into conventional laboratories.

Mr. FOGARTY. $900,000 is a little bit misleading. It is for more than just the library, because you are going to gain much needed space in the existing building.

Dr. SHANNON. Yes, sir. So we can function, and we will have a better laboratory. We will have about a 40-percent increase in space, and we find that our reading facilities for a reservation of that size will be adequate at the present time.

BIOLOGICS STANDARDS ANNEX

Mr. FOGARTY. All right. Now, there is $4,300,000 requested for the annex for the Biologics Standards Building.

It seems to me that this building was just completed a couple of years ago.

Dr. SHANNON. I think the record will show, Mr. Fogarty, when it was completed, that the thought was expressed that the program was in the first stage of development. The Laboratory of Biological Standards has the responsibility for the control of the safety, purity, and potency of biologicals shipped in interstate commerce. Fortunately, we have been able to take advantage of the building program up to the present time. To start with, you recall, this control function was carried on as a laboratory activity within the old Microbiological Institute. It became apparent, with the rapid increase in the development of vaccines, that more adequate control facilities were required so that scientists dealing with control could be at least equal in competence and opportunity to their industrial counterparts that they were supposed to control. The facility has now been in use for approximately 2 years and it has permitted them not only to keep abreast of the industrial development but actually, to give leadership in some of the products that are coming out.

They have been particularly fortunate to be able to give leadership in the development of a practicable, usable, distributable live polio vaccine and have contributed positively in the development of the new measles vaccine. Now as one views other problems such as hepatitis and the like, one sees a progressively increasing burden of responsibility, because these products, once they are introduced, are usually not replaced.

REPAIRS AND IMPROVEMENTS

Mr. FOGARTY. All right. You are requesting $2,381,000 for repairs and improvements. Isn't that the type of expenses that have been financed by GSA?

Mr. KELLY. It has up until this time, Mr. Chairman, but this has been a difficult and unsatisfactory problem. We had some discussion with the committee last year, and we are very pleased to bring it into this budget. This is the first step in a step to bring into our budget all of the repair and improvement programs, and I think this has been particularly acute in the National Institutes of Health, where we have such a huge investment.

Mr. **Fogarty.** What happened to the Bureau of Medical Services?

Mr. **Kelly.** The Bureau of Medical Services is not in yet. We hope the 1965 budget will bring the Bureau of Medical Services in.

Mr. **Fogarty.** The justification says this is a continuing program, except for the Bureau of Medical Services.

Mr. **Kelly.** It is our proposal that we will budget each year for the major repair and improvements of the NIH and the BSS, and we hope that in 1965, we will bring into this the Bureau of Medical Services.

They are still budgeted in the General Services Administration.

REPAIR TO CDC BUILDINGS

Mr. **Fogarty.** $140,000 of this request is to repair cracks in walls in two CDC buildings and replace the roof of one.

How old are these buildings?

Mr. **Simpson.** Two and a half years.

Mr. **Fogarty.** What happened?

Mr. **Simpson.** Dr. Donaldson is here.

Mr. **Fogarty.** Dr. Anderson, were you there when these buildings were built?

Dr. **Anderson.** Yes, sir.

Mr. **Laird.** I don't know what they want to repair those walls for. In a year, they will want to move to Washington.

Mr. **Fogarty.** What happened? Isn't this rather unusual?

Dr. **Donaldson.** I think not too unusual.

Mr. **Fogarty.** You have to replace the roof of a 3-year-old building.

Dr. **Donaldson.** Yes; this was necessary. This was poor construction.

Mr. **Fogarty.** Who built this?

Dr. **Donaldson.** The Beck-Utah Co., I believe.

Mr. **Fogarty.** Under whose supervision?

Dr. **Donaldson.** Well, we had both the Public Buildings Service and the architect inspectors there.

Mr. **Fogarty.** Another item here is to install fire exit stairwells, in four NIH buildings, to meet the minimum code requirements.

Dr. **Shannon.** At the present time fire protection through the installation of the proposed stairwells is highly necessary. These are four old buildings.

Mr. **Seggel.** There is only one exit located in the center of each of these four-story buildings. Exits are needed on both ends.

RENTED SPACE

Mr. **Fogarty.** How many NIH employees are in rented space due to lack of Government-owned space?

Mr. **Seggel.** About 1,400.

Mr. **Fogarty.** How much do you spend each year for rent on that space?

Mr. **Seggel.** Right now, we are spending about $977,000. When I say "we," I mean the Government; most of this is paid out of GSA funds.

SUMMARY JUSTIFICATION FOR EACH REPAIR AND IMPROVEMENT PROJECT

Mr. FOGARTY. Will you place in the record a statement on each project for which repair and improvement funds are requested.

Mr. DORAN. Yes.

(The statement follows:)

Repair and improvement projects for which funds are requested for 1964

COMMUNICABLE DISEASE CENTER

Building repairs and improvements, 1600 Clifton Road $140,000

Two of the buildings have cracks in the exterior walls, and one building is already in need of a new roof. Repairs will include repainting of the windows (exterior), rooms, and hallways, and the recaulking of the exterior windows. Building improvements will include the installation of doors and partitions, the improvement of the lobby entrance in building No. 3, and the construction of a steel catwalk for the sound stage.

Built-in equipment repairs and improvements, 1600 Clifton Road 45,000

Fire and safety equipment will require servicing and replacing of storage batteries, fire hoses, and fire extinguisher refill cartridges. Modification will be performed on low limit electrical switches. Equipment improvements will include the installation of emergency controls at the powerplant for lights and air handling units and installation of a crane to be used as a lifting device for the existing compressors.

Skirting for buildings, Chamblee 2,600

This project will provide skirting to ground to close out the underside of buildings 22 through 34 and 47 through 59.

Increase in electrical distribution system, Chamblee 15,000

This project includes an increase in electrical secondary capacity along 4th Street from building No. 22 to building No. 34 by installation of additional 3-phase transformer banks, and an increase in secondary distribution wire in order to reduce voltage drop and fire hazards.

Replacement of steam reducing station, Chamblee 2,400

This provides for a necessary replacement of the steam reducing station at the building entrances on 3d and 4th Streets.

Building repairs and improvements, Savannah 91,000

Repairs and improvements planned for the Technical Development Laboratories located at Savannah, Ga., include painting and remodeling of the main laboratory building. A considerable amount of wall space can be gained by bricking in the lower half of the numerous ceiling-to-floor windows in certain laboratories and the enclosing of porches in the main building. Modification of the garage is required to facilitate entrance and exit for Government vehicles. A covered walkway between buildings is necessary to permit passage of people and research material from one building to another during periods of inclement weather. Other improvements are: installation of acoustical ceilings in the main laboratory and construction of an urgently needed sewage lagoon to include tide gates and sewer lines.

Built-in equipment repairs and improvements, Savannah 25,000

These equipment repairs involve the normal maintenance required by heating systems and storage refrigerators. Improvements to the existing equipment will include installation of a stand-by generator and a dumb waiter in the insectary.

Built-in equipment replacement, Savannah 45,000

One elevator and a steam boiler will need replacement not later than 1964. Inadequacy of the present heavily used elevator is acute. The steam boiler is rapidly becoming uneconomical to operate and repair and must be replaced.

Repair and improvement projects for which funds are requested for 1964—Con.

COMMUNICABLE DISEASE CENTER—continued

Building repairs and improvements, Puerto Rico Maintenance requirements for the Puerto Rico building include the wiring, painting, and limited repair to the structure.	$20,000

SANITARY ENGINEERING CENTER

Emergency generator An emergency generator is required for the raw water pumping station supplying the experimental pilot plant.	1,000
Standby boiler Procurement and installation of a standby oil fired boiler is necessary to provide for emergencies when the natural gas supply is interrupted.	28,000

NATIONAL INSTITUTES OF HEALTH

Installation of fire exit stairwells Provision of fire exit stairwells in buildings 4, 5, 6, and 7 is urgently needed to provide adequate fire exits. At present the buildings are unsafe and a fire or laboratory explosion could result in serious loss of life. These are 4-story laboratory buildings with only 1 exit located in the center of the building. Exits are needed on both ends to meet minimum code requirements (item 3511, National Fire Protection Association, Building Exits Code, dated May 21, 1958). On all 4 buildings stairwells are to be extended to the basement level at each end housing mechanical spaces, and to the subbasement level at the opposite ends. A means of ingress and egress at ground level of all buildings for physically handicapped persons is also included.	500,000
Improvement of air-conditioning and ventilation systems This project is needed to improve the air-conditioning and ventilating systems in the cancer research building—building 6. These systems were originally installed to provide heating and ventilating only. Improvised systems for providing air conditioning were later installed. The system capacities are inadequate and represent environmental hazards to research personnel. The existing improvised systems, many of which have deteriorated beyond repair, are to be removed. The main distribution systems and components are to be enlarged. Cooling for air conditioning is to be provided by connecting the system to the central chilled water distribution system.	300,000
Modification of main entrances of Clinical Center This improvement is needed to eliminate the current difficulties in opening and closing the doorways on the north and west sides of the Clinical Center. The existing manually operated, unbalanced doors make it practically impossible for patients or weak persons to open the doors. In addition, cold drafts are introduced into the entire area of the lobbies during winter months. It is planned to install power operated doors and enlarge the entrance modules.	25,000
Improvement and repair of elevators This project involves the improvement of passenger elevators in buildings 5 and 6. These are urgently in need of major repair. The principal components of these elevators will be replaced with modern equipment, and the existing cabs will be renovated.	75,000
Modification of boilers This project is needed to correct discrepancies in the size of component parts on the fire side of the building 11 boilers which preclude operation of these boilers at designed capacity. This additional capacity is now urgently needed to accommodate the additional load created by new buildings. Preliminary air preheaters are to be installed on all three boilers between the forced draft fans and existing air preheaters. The mechanical soot collection systems and induced draft fans are to be altered on all three boilers.	70,000
Installation of emergency electrical supply for operating suites and other critical areas of the Clinical Center	180,000

Repair and improvement projects for which funds are requested for 1964—Con.

NATIONAL INSTITUTES OF HEALTH—continued

This improvement is needed to provide instantaneous standby electrical service for the operating rooms and other critical utilities in the Clinical Center. This service is needed to alleviate hazards to patients and personnel during failure of normal power supplies. It is planned to install instantaneous start, diesel driven electric generators in a separate structure near the Center.

Modification of main incinerator plant ---------- $100,000

This improvement is needed to reduce occupational hazards in handling infectious materials and in charging materials into the incinerator combustion chamber. In addition, an efficient method for removal of ash and nonburnables is needed to eliminate the existing, expensive, tedious manual methods. Mechanized systems will be installed for depositing infectious materials into the incinerator combustion chambers. Existing charging hoppers and charging gates at the top of each incinerator are to be revised and the ash removal system improved.

Modification of pneumatic mail tube system ---------- 173,000

This improvement is needed to automate portions of the existing system which currently require manual operations. This will make a comprehensive system of several systems installed during the course of many years of building expansion. The automatic equipment will be installed at the transfer station in the Clinical Center and in other outlying buildings as required. Associated facilities will be provided to make the systems compatible.

Improvement and repair of roads, sidewalks, and entrance ways ---------- 353,000

This project is needed to improve traffic flow, road systems, walkways, and main entrances at the NIH reservation. Some esthetic improvements are included but are primarily restricted to two formal entrances, one on the east and one on the west of the reservation. Center Drive from Old Georgetown Road to the Clinical Center is to be widened. Entrance monuments and an information booth are to be installed. South Drive from Wisconsin Avenue to Center Drive is to be widened and entrance monuments and an information booth are to be installed. Road systems damaged by heavy truck traffic associated with building construction are to be repaired. Several sidewalks are needed adjacent to peripheral roadways.

Air-conditioning, Middle America research unit ---------- 190,000

Humidity and temperature in the tropics present special problems in a research operation. In the MARU laboratory the most critical areas have been served through the installation of an assortment of window conditioners, supplemented by several 3-ton units. This has been expensive and undependable, as the life expectancy of a window-type air-conditioner in the Panama Canal area is not more than 3 to 4 years. Less than ⅕ of our present space (primarily animal rooms) is air-conditioned.

The Canal Zone Government now has a project underway to air-condition buildings of the Gorgas Hospital complex and a number of administrative buildings of the Panama Canal Company. It is our understanding that the contract calls for completion of a central system by June 30, 1963.

The Panama Canal Company has invited other Federal agencies in the Canal Zone, including the Middle America research unit, to tie into the chilled water system. It would be highly desirable to accept the offer of the Panama Canal Company to tie into their central system. To accomplish this, NIH must bear the cost of installing the necessary duct work and mechanical auxiliaries in the building, and the connecting line to the central system.

Total estimate ---------- 2,381,000

(Repair and improvement projects have not previously been included in this appropriation account.)

Mr. **Fogarty.** Before I forget it, I meant to ask Dr. Terry this earlier and I forgot it.

LANGUAGE CHANGE FOR FOREIGN HEALTH INFORMATION PROGRAM

On page 148 of the committee print, there is a change in language, taking out the authority for expenses incident to the dissemination of health information in foreign countries through exhibits and other appropriate means.

What is the meaning of this—deleting this language?

Dr. **Terry.** It is a Bureau of the Budget deletion.

Mr. **Fogarty.** Why did they delete it?

Mr. **Kelly.** They objected to the authority being in our appropriation.

Mr. **Fogarty.** I though it was good authority. I thought we have had some good exhibits at some of these international conferences.

Dr. **Shannon.** I don't think they objected to the expenditure but we had a similar comparable situation. This has to do with the localization of U.S. representation of dollars in a single appropriation, in the State Department, rather than distribute it. We had this problem in putting in our oversea representative, with the State Department.

Mr. **Kelly.** This problem arose in connection with our development with one piece of legislation, in which we agreed that we would get all of it, the legislation in our Appropriation Act into regular legislative bills, and the issue that arose on this related to what the authority of the Department should be in the international field, and occasioned the Budget Bureau, that objected to our proposal, to also delete it here.

Mr. **Fogarty.** Our committee, several years ago, disagreed with the Bureau of the Budget.

Mr. **Kelly.** Yes. You inserted the language.

Mr. **Fogarty.** I still haven't changed my mind. I still think you ought to have authority to carry on these programs, instead of having it done by the State Department. I think you are just as important as the State Department is and much more capable of handling this type of thing.

Was there much discussion on this, or did you just give in?

Mr. **Kelly.** Well, from our standpoint, the issue doesn't really relate to the question of whether or not this language is in this Appropriation Act, but what authority is provided for in the basic legislation, which is being recommended, and those discussions are still continuing.

Mr. **Fogarty.** As I remember the Department of Labor had an increase for information activities under their international labor office.

Mr. **Kelly.** We have not been that fortunate.

Mr. **Fogarty.** We will recess until 10 in the morning.

FRIDAY, MARCH 1, 1963.

ACCIDENT PREVENTION

WITNESSES

DR. PAUL V. JOLIET, CHIEF, DIVISION OF ACCIDENT PREVENTION
DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES
EUGENE L. LEHR, CHIEF, PROGRAM AND PLANNING BRANCH, DIVISION OF ACCIDENT PREVENTION
JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	888	1,087	1,181
Positions other than permanent	67	102	180
Other personnel compensation	1		7
Total personnel compensation	956	1,189	1,368
12 Personnel benefits	84	98	111
21 Travel and transportation of persons	158	140	175
22 Transportation of things	21	13	15
23 Rent, communications, and utilities	19	12	28
24 Printing and reproduction	16	15	23
25 Other services	110	82	83
Services of other agencies			1
Research contracts	125	168	732
Payment to—			
Bureau of State Services management fund	35	40	126
National Institutes of Health management fund	25	23	27
26 Supplies and materials	50	32	55
31 Equipment	28	20	38
41 Grants, subsidies, and contributions	1,917	1,828	2,075
Total obligations	3,543	3,660	4,857

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	146	147	153
Full,time equivalent of other positions	16	27	40
Average number of all employees	134	167	184
Number of employees at end of year	170	211	227
Average GS grade	8.5	8.6	8.7
Average GS salary	$7,125	$7,499	$7,530

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Research grants	1,917	1,828	2,075
2. Research, training, and technical services	1,519	1,805	2,782
Total program costs, funded [1]	3,436	3,633	4,857
Change in selected resources [2]	107	27	
Total obligations	3,543	3,660	4,857
Financing:			
Unobligated balance lapsing	73		
New obligational authority	3,616	3,660	4,857
New obligational authority:			
Appropriation	3,618	3,668	4,857
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−2	−8	
Appropriation (adjusted)	3,616	3,660	4,857

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[1] Includes capital outlay as follows: 1962, $23,000; 1963, $21,000; 1964, $37,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $37,000 (1962 adjustments, $70,000); 1962, $214,000; 1963, $241,000; 1964, $241,000.

Mr. FOGARTY. The committee will come to order.

We have before us this morning the Division of Accident Prevention. Dr. Joliet, are you going to testify on this appropriation?

GENERAL STATEMENT

Dr. JOLIET. I have a short statement, if you would like. I can read it.

Mr. FOGARTY. Go ahead.

Dr. JOLIET. Mr. Chairman and members of the committee:

The impact of our accident prevention program on the Nation has been encouraging in terms of health preservation. This impact has stimulated state and local health agencies to establish new programs; industries to modify and improve their products; schools and universities to examine their curriculums; and civic groups and associations to reconsider their responsibilities.

The Public Health Service has been able to demonstrate in selected areas that accidental injuries can be prevented when the causes are determined and when preventive programs are carried out. We are now ready to move ahead and apply our methods on a broader scale. This approach, well established in disease control, involves: finding the cause or causes, developing preventive methods, and getting the preventive program adopted.

The estimate of $4,857,000 provides an increase of $247,000 in research grants and $765,000 for directed research to improve our knowledge of accident causes. Through research grants we are seeking to encourage outside institutions and individual researchers to apply their talents to the accident prevention field. Through our directed program we will focus our research effort on selected problem areas. A better understanding of the human factors affecting the operation of motor vehicles will be brought about through the development and use of simulation devices. Other priority areas of concern are the causes of accidents among the aged and accidents to children and youths.

We must also continue and intensify our efforts to find, adapt, and put into use knowledge already available for improving accident control programs. A portion of the increase, $135,000, is directed toward this end. It is well established, for example, that seat belts will save lives. Increasing numbers of people subscribe to this and there has been a rapid advance in seat belt sales this year. There are still many people who do not use seat belts and we have a suspicion, perhaps, that those that adopt them first are those that are conscious of the possibility of accidents anyhow. We are anxious to get the balance to use them. We feel this is a known thing that should be exploited better than we have been able to do in the past.

Improvements in the emergency handling and transportation of accident victims is another area where the application of existing medical skills and knowledge has lagged, and very many others join us in that belief. There is a substantial lack of knowledge as to what is required for improvement. We are getting some information in that area in San Francisco, and we hope to elicit other similar information in other areas of the country.

Mr. Fogarty. What do you mean by that? What information?

Dr. Joliet. Well, for example, we don't know, generally speaking, what kinds of people are carried how far, what particular things they have wrong with them, and what the people who give first aid have to know to handle them properly.

There is also a general shortage of trained medical and paramedical personnel available for work in accident prevention. This shortage is felt in the research effort as well as in the effort to get programs organized and operating. In 1962 funds were provided for the initiation of career training of young college graduates for work in this field. The 10 men given training at New York University were assigned to State and local health departments about 8 months ago and are now carrying out active programs. The estimate provides $50,000 additional for the training or orientation of State and local public health employees in the methods of and techniques of accident prevention.

Our program for reducing home accidents has been remarkably successful and will be continued at the same financial level as in 1963, and we hope to continue it.

I shall be happy to answer any questions that I can that you may have.

PREPARED STATEMENT

Mr. Fogarty. We will place your longer prepared statement in the record.

(The statement referred to follows:)

Statement by Chief, Division of Accident Prevention, Public Health Service, on "Accident Prevention"

Mr. Chairman and members of the committee, the impact of our accident prevention program on the Nation has been encouraging in terms of health preservation. The general national change is indicated in various ways. State and local health agencies, motor vehicle administrators, and other agencies and organizations are asking for help in getting new programs going or in improving current programs. Industries are cooperating and improving many of their products with an aim toward greater safety—notable here are fixtures in cars for seat belt attachments, lawnmower blades that will not mangle limbs, and glass for doors and picture windows that will not shatter and injure. Schools and colleges are examining their curriculum and teaching programs with a view toward including accident prevention. Civic groups and associations, such as the National Federation of Women's Clubs and other professional associations, are reconsidering their responsibilities and capabilities in this field.

We feel that part of this renewed or redirected interest stems from the accomplishments achieved through the program carried out by the Public Health Service. Essentially, we have demonstrated in selected program areas that if accidents are approached scientifically, the causes can be found and corrected or preventive action can be taken.

The extent and nature of this continuing health problem is indicated by the following:

There are about 92,000 accidental deaths annually.

Accidents are the leading cause of deaths in the age groups 1 to 35. They account for over half of the deaths in young adult males.

Nine million Americans have a physical impairment due to an accidental injury.

Accidents account for 20 percent of paralysis cases under age 45.

Accidents account for 75 percent of lost extremities, hands, arms, legs, etc.

Almost 7½ million Americans have other impairments of the limbs, back, or trunk due to accidental injury.

Thirty-two percent of hospital emergency room cases are accident victims.

Eight percent of general hospital bed days are due to accidents.

The operating plan and budget for reducing this problem is discussed below.

RESEARCH

Research is a vital prerequisite to the control of accidents. From it we can identify the problem, understand the problem, and develop control techniques. This has been demonstrated dramatically in one project area where injuries from fires were reduced by 50 percent. Similarly, prompt epidemiological investigation and corrective action probably saved many lives from a widely distributed trailer heater model which had a built-in defect. Back of each of these programs was an extensive research and investigation program. Many agencies and organizations joined in the preventive effort as soon as the problem was understood and the method of prevention was suggested and introduced.

We are convinced that this same approach will be successful in reducing, on a national basis, other deaths and injuries in the home, on the highway, and in many public places such as recreational areas.

The research program presented in this budget provides for financial support of worthwhile research through grants and for research to be directed or carried out by the Public Health Service. This two-pronged approach permits us to tap the research potential of outside research institutions and individuals and also to pinpoint and concentrate on specific and immediate accident problems.

The intramural research program will be focused primarily on the persons involved in accidents. Studies will emanate outward from the death of injury to examine the possible associated physiological or psychological conditions which may have caused or permitted the accident to occur. Such studies must of necessity also consider other factors, such as the environment or injury producing agent that may have affected the person's performance or experience.

While the current research program is moving forward on a board front, greater emphasis is being given to some high-priority areas such as traffic accidents, accidents among the aged, accidents to children. In some areas we are only at the stage of determining the extent and nature of the problem.

Last year the Congress approved funds requested in the President's budget to initiate developmental research in connection with a driving simulator. With these funds we are contracting for a test model of a method of simulating what a driver sees and observing what he does in response to what he sees. Studies have shown that the method is sound, but an actual working model is necessary to guide development of its complexities. We must proceed as rapidly as possible to develop the equipment and carry out essential studies of drivers and their capabilities under varying conditions. Accordingly, we are requesting an increase to accelerate the development and use of simulation equipment.

Our research program also provides for the continuation of a study of emergency transportation and handling of accident victims. This study, begun in

California last year, is designed to determine the essential requirements for a satisfactory emergency ambulance services program.

A more intensified study of accidents among the aged is also provided for in this estimate. A study begun in St. Petersburg, Fla., last year, is designed to explore many of the factors associated with accidents to the aged. This study will include physiological, psychological, sociological, and other factors. For example, a study will be made of body movements, such as walking, turning, stepping up or down, bending, moving the head, etc., to determine whether or how these things may affect their having accidents.

TECHNICAL ASSISTANCE AND CONSULTATION

As mentioned above, the ultimate objective in our method of operation is to get preventive knowledge put to use. We must continue to find, refine, adapt, and put into use knowledge already available for improving accident control programs. The seat belt program initiated by the Public Health Service and now supported and sponsored by industry and voluntary organizations and by State legislation, has increased the number of automobiles with seat belts from an estimated 2.4 percent in 1959 to 15 percent in 1962. In 1964 we propose to intensify this program and to reach and motivate more people to use seat belts or other restraining or protective devices.

Plans are now being made to bring together such groups as the American College of Surgeons, the medical associations, the ambulance associations, and others, to determine what should be done to improve handling and transportation of accident victims to complement the study now underway. Various proposals and methods for improvement have been tried on a limited scale. In 1964 we are requesting funds to provide the technical services and assistance required to develop this emergency medical services improvement program.

Accidental deaths and injuries occurring in and around the home continue to be one of our major problem areas. The vulnerability of this problem to the scientific methods of attack has been demonstrated. The willingness of industry and other groups to participate and contribute in preventive programs has also been shown. In 1964 we will continue our efforts to reduce the family accident problem.

The program for the control of accidental poisonings is well known to this committee. Through local poison control centers, serviced by our national clearinghouse, we provide essential information on the identification of toxic products, the diagnosis of poisonings and their treatment. We are now intensifying our efforts to reduce the occurrence of accidental poisonings. The increase in funds for 1963 enabled us to participate actively in National Poison Prevention Week and reach millions of people through the various communications media. It also permitted us to establish one statewide demonstration program. In 1964 funds are requested to extend these demonstrations to other areas for further testing preliminary to their introduction on a national basis.

TRAINING

There is a general shortage of trained medical and paramedical personnel available for work in accident prevention. This shortage is felt in the research effort as well as in the effort to get programs organized and operating. In 1962 funds were provided for the initiation of career training of young college graduates for work in accident prevention. The 10 men given training at New York University were assigned to State and local health departments about 8 months ago and are now carrying out active programs. The estimate provides for an increase in the training or orientation of State and local health employees in the methods and techniques of accident prevention.

The estimate of $4,857,000 will provide an increase of $1,196,872 and six positions for these accelerated activities which includes $247,000 for research grants and $598,000 for development of stimulation equipment for research. I will be happy to elaborate on any point in which the committee may be interested.

LOCAL EMERGENCY MEDICAL SERVICE

Mr. FOGARTY. Up my way, and I guess throughout the country, there has been an increase in the number of ambulances that have been purchased by voluntary groups. In Rhode Island, almost every town has an ambulance. Ten years ago almost no small town had one. Also, almost every volunteer fire department has a rescue truck and squad. What is being done to coordinate their activities or to train these groups? It seems to me that if an accident happens on the highway in Rhode Island, the rescue squad is called; if somebody has a heart attack at home, the rescue squad or volunteer fire department is called. They are almost all manned by volunteers and the rescue trucks are run by the volunteer fire departments.

Dr. JOLIET. There is no pattern in the country. The rescue squad such as we have here and such as you describe in Rhode Island were unknown to me before I came to Washington. They undoubtedly are spotted throughout the country. In some places, the emergency medical service is given by the police department and in some places by the fire department and in some places by the health department. Many places, perhaps most places—and this is the part of the basic data we don't know—emergency services are given by funeral directors and funeral homes. I think we would have to say as far as we know from very scanty information, that the quality of the care given is not necessarily related to who runs the operation—whether it be the health departments, independent businessmen, funeral directors, fire departments, or police departments. It depends on someone locally having the desire to properly train the attendants and properly equip the ambulance they use.

Mr. FOGARTY. What help does a funeral director give in accidents?

Dr. JOLIET. Well, while I know nothing about the goodness or badness of the service that category gives, I have no reason to believe that they cannot give very good service or very poor service, depending on their desire to select properly trained attendants and properly equip their facility and ambulance. We are trying to get information that will give us a better picture of what kind of service is rendered by whom, so that we can get people together to train the attendants properly and so that we can equip the ambulances properly.

Mr. FOGARTY. I just cannot remember seeing a health department rendering first-aid in a highway accident in my State.

Dr. JOLIET. I think it is extremely variable. The ambulances in San Francisco are manned and operated by the San Francisco City Health Department and I am quite sure that is unique.

Mr. FOGARTY. Most hospitals have ambulances.

Dr. JOLIET. Yes, sir.

Mr. FOGARTY. And of course, they are manned by professional people, I assume. In the last 8 or 10 years, it seems that most every small town has gotten together a group of volunteers and raised money for an ambulance.

Dr. JOLIET. I know about some of the volunteer squads firsthand and some of the care given by those squads is excellent. Now, if I might, just for a moment, attack it from the other end, there is no requirement in many places that the ambulances be so constructed or so equipped or that the attendants be so trained as to meet any standard at all. What makes us worry is, and this is not my worry solely, or that of the Public Health Service—it is the worry of the American College of Surgeons—their committee on trauma, the National Safety Council—all organizations have ample evidence that where the ambulance is not properly equipped and where the attendants are not properly trained, that many people are actually killed after the accident occurs and their injuries are made worse from the point of the accident to the point of definitive care, usually in a hospital or elsewhere. So, starting from that standpoint, we would like to find out what categories of persons are carried and how far they are carried and what is the matter with them.

Mr. FOGARTY. How much is in the budget for that?

Mr. HAMBLETON. $20,000, sir, additional.

Mr. FOGARTY. You cannot find out much for $20,000.

Dr. JOLIET. We get some of this work in cooperation with the local health departments—part of the work.

Mr. FOGARTY. How many local health departments have an accident prevention specialist? I do not know of one in my State.

Dr. JOLIET. I cannot say, sir—very few.

It is my misfortune not to be too well acquainted with Rhode Island, however, it is not general yet that there are many accident prevention specialists in local health departments. There are some.

Mr. FOGARTY. In State departments of health?

Dr. JOLIET. We are getting great interest at the State level. There are at least 19 now and they are growing by leaps and bounds.

Mr. FOGARTY. I do not think Rhode Island is one, but I am not sure.

Dr. JOLIET. Dr. Cannon has requested and received two people from the Public Health Service on loan and it is our hope that when that loan concludes, that Rhode Island will choose to employ their own person.

Mr. FOGARTY. I hope so, too. I think they should have. I am for doing something in this field.

SUMMARY OF BUDGET

The appropriation for 1963 is $3,668,000 and the request for 1964 is $4,857,000, an increase of $1,189,000.

What are your Pay Act costs for 1963?

Some of these things may be answered by your budget man.

Mr. HAMBLETON. $45,000.

ABSORPTION OF ADDED EXPENSES

Mr. FOGARTY. How much are you absorbing?

Mr. HAMBLETON. $45,000.

Mr. FOGARTY. Do you have to absorb the whole cost?

Mr. HAMBLETON. Yes, sir.

Mr. FOGARTY. You were directed to do that, I suppose.

Mr. HAMBLETON. Yes, sir.

Mr. FOGARTY. So that means they cut you back $45,000 from what we gave you last year?

Mr. HAMBLETON. Yes, sir.

Mr. FOGARTY. Are there any other costs that you are absorbing in 1963?

Mr. HAMBLETON. Yes, sir, we are absorbing the quarters allowances of $4,000.

Mr. Fogarty. Some of these budgets I cannot understand. They cut you back one year and at the very same time approve a sizable increase the next. There is no consistency.

There is a transfer of $7,800 to GSA. Would you have to absorb that?

Dr. Joliet. Yes, sir, I understand that is a nonrecurring item for the first year.

Mr. Fogarty. Is this another on-again, off-again deal?

Mr. Kelly. This question of transfers for rental of space—the practice is, we pay for the first year's cost and treat them as a nonrecurring item.

Mr. Fogarty. By making them absorb these costs, that is actually cutting them back $45,000 plus the other costs.

Mr. Kelly. We thought we were doing this responsive to the congressional direction.

Mr. Fogarty. The Labor Department didn't absorb any pay act costs.

Driving Simulator

Half of the total increase is primarily work on developing a driving simulator.

Dr. Joliet. Yes, sir.

Mr. Fogarty. How is that coming along? How much have we spent on it already?

Dr. Joliet. We are in the process of spending approximately $150,000.

Mr. Fogarty. Through 1963?

Dr. Joliet. Yes, sir.

Mr. Fogarty. And how much in 1964? How much was that?

Dr. Joliet. $157,000 in 1963.

Mr. Fogarty. What do you anticipate in 1964?

Dr. Joliet. Approximately, for the research part for the simulator, $498,000.

Mr. Hambleton. There is a hundred thousand dollar increase for computer simulation, for a total of $598,000.

Mr. Fogarty. We saw a model here 3 or 4 years ago. Is that the one that you are working on?

Dr. Joliet. It is not unlike that. It will not be identical to that. Whether the girders are in the same place or not, I don't know.

Mr. Fogarty. When will this be built?

Dr. Joliet. We estimate it should be completed in approximately 5 years, sir, now that we have the start. We didn't start until 1963, until this current year.

Mr. Fogarty. Takes 5 years to build something like that?

Dr. Joliet. Yes, sir. I hope we can get it done in that period of time.

Mr. Fogarty. I did not realize it was that difficult.

COMPLEXITY OF PROPOSAL

Dr. Joliet. If I may, there are very simple simulators such as are used for training high school students. This is a training simulator. It is a very cheap device. It may be quite adequate for the purpose, but it is quite different from the device that we had the model for. It is a very complex operation, sir. It is to reduce close to reality the actual task of driving a car, which involves reproduction of a visual image and the ability to move cars against the car you would be driving. In other words, it is fairly easy to develop a situation in which your car drives against a fixed scene—against a roadway. But what we have to do is to develop an operation where your car and what you do will relate to what some other car does and that car has to relate to what you have done again.

For example, if a car coming toward you took action to cross the road to you, then you would try to avoid it and that other car has to do something and you have to do something following that. The whole scene has to be exactly reproducible so we can try it out on another individual which gets to be rather complex, sir.

Mr. FOGARTY. Are you getting any cooperation from the Bureau of Public Roads?

Dr. JOLIET. Yes, sir, we are working together very closely. They are interested also. We have almost weekly meetings with them.

Mr. FOGARTY. Are they putting up any money?

Dr. JOLIET. Not to this time, sir, they have not.

Mr. FOGARTY. Do they think this is a good program?

Dr. JOLIET. Yes, sir, they do. We joined with the Bureau of Public Roads and the Automotive Safety Foundation in having a conference on simulation at Santa Monica last year. They are the three most interested groups.

Mr. FOGARTY. What do you estimate the total cost will be?

Dr. JOLIET. As nearly as we can estimate, approximately $4 million—$4,500,000.

INDUSTRY COOPERATION

Mr. FOGARTY. What about the automobile industry? Are they cooperating or helping in any way? Are they showing any interest in this?

Dr. JOLIET. They seemed interested and during the conference they were interested. I cannot speak for the industry as to how they feel about the simulator. They have simulators of their own or they use simulators of their own in developing salable cars. If I might put it this way—I hesitate to speak for the Bureau of Public Roads—I think they are primarily interested in developing good roads and safe roads. The automobile industry is primarily interested in developing safe cars and good cars. We are interested in developing safe drivers. There is an overlap between the three things. The industry is primarily interested in developing cars and we primarily are interested in studying the driving so there isn't a complete feeling of interdependence. They are interested in developing good drivers also, and we are interested in developing safe cars also, but the area of the great lack of knowledge that we are primarily concerned with is the lack of knowledge of what a human being has to be and do to drive a car. We are concerned because it could be that the wrong people may be deprived of their licenses.

Mr. FOGARTY. Are you convinced the industry is really interested in building a safe automobile?

Dr. Joliet. In one sense of the word, I think you would have to think they were, sir. I don't think they are primarily interested in that, but they drive in the cars they build; their wives drive in the cars they build and their children drive in the cars they build.

Mr. Fogarty. It seems to me they are more interested in developing more horsepower in the automobile than they are in the safety features.

That is just my own opinion.

Dr. Joliet. I don't know whether you want me to comment or not.

Mr. Fogarty. I did not ask you to, but you can comment if you want to comment.

Dr. Joliet. I think maybe they do it because it seems to fill a demand that the public seems to have.

Mr. Fogarty. I hope they show more interest in your program than they have in the air pollution problems during the last 10 years.

Dr. Joliet. They seem to be reasonably friendly to us as opposed to the way they were about 3 or 4 years ago. I think they were a little bit suspicious of us. It seems to me that they are less suspicious of us.

Mr. Fogarty. Well, they were told last year, to get going or else, were they not, by the Secretary, Mr. Ribicoff.

Dr. Joliet. Yes, sir.

Mr. Fogarty. He practically issued an ultimatum and they started doing something about it.

Dr. Joliet. Yes, sir.

Mr. Fogarty. I do not think what they did was half enough, but at least they have recently been attempting to do something.

AUTOMOBILE SEAT BELTS

Dr. Joliet. This year Studebaker is coming equipped with seat belts for the first time. If people don't want to use the seat belts they can have them taken out, but this is, we think, a step forward and they have made other steps forward.

Mr. Fogarty. I think that is a good step.

Some of the States have forced them to do this.

Dr. Joliet. Yes, sir.

Mr. Fogarty. I think the State of Wisconsin was the first State to require safety belts and this was in 1961. Also, the State of California has taken action. They are almost being forced into this position by the States.

Dr. Terry. On the other hand, just recently one State passed an act requiring that all new cars sold have seat belts. It was vetoed by the Governor.

Mr. Fogarty. My State legislature passed a bill a year ago to require all busdrivers to have seat belts in our transit system and they said a few months ago that they are too cumbersome, and interfere with their driving. It seems to me it should have been the other way around, they should have insisted on supplying the seat belts for the passengers. I do not ask you to comment on that.

Dr. Terry. On the other hand, I think it is very important for those of us who are riding in public vehicles that nothing happen to the operator of that vehicle. I think this is important. I wouldn't like for the door to be thrown open and he to be thrown out if he could be held in position and still be able to maintain some control.

RESEARCH GRANTS

Mr. FOGARTY. The other sizable increase is $247,000 for research grants. This will only allow you to finance 10 new projects. That is just the same number of new projects you are financing this year.

Dr. JOLIET. Yes, sir.

Mr. FOGARTY. How many approved applications do you expect to have on hand next year?

Dr. JOLIET. I think approximately 40, sir. It is difficult to come out with a specific figure.

Mr. FOGARTY. I know; but what is your best estimate?

You are going to be able to finance only 10. How many do you think will be approvable applications that you will have on hand?

Dr. JOLIET. I think that we probably will have about four this year that won't be funded and I imagine we may have double that next year that will be approved but not funded.

Mr. FOGARTY. That is what I mean.

APPROVAL PROCESS FOR GRANT APPLICATIONS

What procedure do these applications go through to get approved?

Dr. JOLIET. They go through a very rigorous procedure. There is a study section which has on it the most knowledgeable people that can be selected in accident prevention.

Mr. FOGARTY. Can you supply for the record that study group?

Dr. JOLIET. Yes, sir; I can.

(The statement follows:)

Accident prevention research study section

Name and title	*Discipline*
Dr. E. Lowell Kelly (chairman), Professor, Department of Psychology, University of Michigan.	Psychology.
Mr. Howard A. Baldwin, director, Laboratory for the Study of Sensory Systems, Inc., Tucson, Ariz.	Biophysics (telemetry).
Mr. Jerome Cornfield, supervisory mathematical statistician, Biometrics Research Branch, NHI, NIH, PHS.	Mathematical (statistics).
Dr. John C. Flanagan, president, American Institute for Research, Pittsburgh, Pa.	Psychology.
Dr. William Haddon, Jr., director, Epidemiology Residency Progress, New York State Department of Health.	Epidemiology.
Mr. Harry H. Harman, manager, Systems Simulation Research Laboratories, System Development Corp., Santa Monica, Calif.	Statistics.
Mr. Frederick W. Hurd, director, Bureau of Highway Traffic, Yale University.	Civil engineering.
Dr. Herbert H. Jacobs, vice president and director, research and development, Hallmark Cards, Inc., Kansas City, Mo.	Psychology.
Dr. Paul F. Lazarsfeld, professor, Department of Sociology, Columbia University.	Sociology.
Dr. Leonard M. Schuman, professor of Epidemiology, School of Public Health, University of Minnesota.	Epidemiology.
Mr. Derwyn M. Severy, Institute of Transportation & Traffic Engineering, University of California, Los Angeles.	Engineering.
Dr. Wilse Bernard Webb, chairman, Department of Psychology, University of Florida.	Psychiatry.
Dr. Sidney L. Werkman, associate director, Department of Psychiatry, Children's Hospital, Washington, D.C.	Psychiatry.

Dr. Joliet. It is a group of the very best people we know how to pick. Best as far as knowing about accident prevention and being at the top of their respective fields. It includes psychologists, psychiatrists, physicists, epidemiologists, engineers, physicians. I can read the list if you like.

Mr. Fogarty. It will be in the record.

Dr. Joliet. These people sit without governmental direction at all. They review the projects that come to them. Before they review the projects at the meetings each specific project is assigned to a group of two or three and they review them carefully. Sometimes, if they can't get enough out of reading they make an onsite visit. When they come to the study section meeting they know thoroughly what the particular project is that they have been responsible for. One member reports on each project.

Mr. Fogarty. Then what happens?

Dr. Joliet. They take a vote. If it is approved, then it is referred to the National Advisory Health Council for review.

Mr. Fogarty. These are the same steps that the Institutes of Health have?

Dr. Joliet. The first review is essentially a technical review. In the second review, the grants are considered in relation to the overall program of the Service, and need of accident prevention.

Dr. Terry. This is exactly the way our study sections and councils work at NIH, so that I think this is almost an identical review.

Mr. Fogarty. It sounds like it.

Dr. Joliet. It is identical, sir.

RESULTS OF RESEARCH GRANTS

Mr. Fogarty. Can you give us a couple of examples of worthwhile results from projects that have been completed?

Dr. Joliet. Well, the one that I know most about and that has been very effective has been reported to you previously, the Cornell project. That project has recently been renewed to evaluate the effectiveness of new safety devices placed on cars—seat belts, padded dashes, the deep-dish steering wheels. It is necessary, I think, to find out what effect these devices may have had on automobile accidents. That project will continue to study these particular devices and other devices. There is a very interesting study being carried out at the University of Michigan. Two investigators are studying single-car fatalities. There is a great deal we don't know about them. A large number of automobile accident fatalities occur in single-car accidents. The usual thing you hear is that they are due to excessive speed. A car went off the road and somebody ended up dead. We don't know how many were due to heart attacks, epilepsy, to alcohol, or to medical conditions. Until a series of consecutive cases are studied the relationship of the human factor to this kind of accident will be unknown. That study is being done and I think it is interesting. I can talk as long as you wish on that.

Mr. Fogarty. Is it the only completed one that you want to mention?

Dr. Christensen. I think it should be said that there have been relatively few research projects in the accident program until the last 4 or 5 years. Prior to this time, I imagine the number would be well under 50, and it is just within the last few years that there has been an increase in the number. So the numbers of completed projects are relatively few.

Mr. FOGARTY. Put a few other examples in the record.

Dr. JOLIET. Yes, sir.

(The information follows:)

EXAMPLES OF RESULTS FROM RESEARCH GRANTS

FINDINGS IN REGARD TO DESIGN FEATURES

1. University of California at Los Angeles: A series of controlled collision experiments (head-on, barrier, rear-end, oblique, side impact) have generated a great deal of data of use to automotive engineers in the design of safer automobiles and restraining devices, such as seat belts, also information on structural materials such as glass and particular structural members, such as frame and body components, especially door latches, and on the energy-absorbing characteristics of automobile structures during rapid deceleration, also the way in which body impacts with structural glass injures the head, face, and skull. It has been shown that many door locks become unlatched during a collision due to the inertial forces of the components of the door lock itself. Suggestions for redesign have resulted and are being discussed with manufacturers.

2. Flight Safety Foundation, Phoenix, Arz.: A considerable fund of crash injury data have been generated and made available to the aircraft manufacturing industry which have implications for safer structural design of the compartment of light planes. Data on the limits of seat belt protection to occupants of light planes indicate the need to consider the seat belt as part of the total system of passenger protection, rather than a system by itself.

3. State University of Iowa: This study on the epidemiology of farm tractor power takeoff accidents has also uncovered features of the power train which increase the hazard of catching the clothing of the operator. Conferences held with tractor manufacturers have resulted in plans to modify such design.

4. Snell Memorial Foundation and University of California at Davis. Studies have evaluated design criteria of protective headgear for use in recreation, such as football, and also for use in auto racing and by police who are mounted on motorcycles, and in other sports.

FINDINGS AND PRODUCTS OF DIRECT UTILITY TO PROGRAMING

1. University of Missouri: A study of the epidemiology of farm accidents showed that 83 percent of the accidents did not involve farm machinery. More accidents were associated with hand tools and animals than with tractors, cornpickers, combines, hay balers, harvesters, or any other item of farm machinery. More accidents occurred in the yard than in any other place on the farm or off the farm. These findings have immediate implications for accident prevention programs in rural communities.

2. Michigan State University: A study of films was made which are used in driver education to determine effectiveness in terms of improved attitudes and/or improved skills. It was found that the arousal of strong emotion by means of films often results in defeating the purpose of the film. This has implications for the design of educational films for the promotion of safe behavior.

3. University of Michigan: Instrumentation has been developed to make measurements of those driver behaviors which affect the control of the vehicle, while at the same time recording events in the traffic stream or in the roadway to which the driver needs to respond. This promises to be very useful in further research on driving behavior.

4. Wayne State University: The measurement of impact effects on cadavers were studied. The findings have implications for the treatment of vertebral end plate fractures, a common effect of impact that is difficult to find by X-ray examination. These findings assist the physician by providing prior knowledge of what kind of fractures to expect from given types of accidents.

5. Cornell Medical School: Studies have shown the implication of alcohol in fatal accidents to range around 50 percent of the cases, on the part of either pedestrians and/or drivers. Moreover, the implication of heavy drinking is emphasized.

DEFINITION OF "COMPETING" AND "NONCOMPETING" GRANTS

Mr. FOGARTY. I notice through the Public Health budget the terms "competing" and "noncompeting" with regard to research grants. What do you mean by these terms?

Dr. JOLIET. The "noncompeting" grant is one that had an initial approval for about 3 years. They are reviewed but don't have to compete against new incoming grants. At the end of the first year they are reviewed for progress and if there is enough available money, they go ahead. At the end of that term, at the end of the 3-year term for which they have been approved, if they wish to continue for another year, for an additional period of time, they are competing. In essence they are a new submission.

Mr. KELLY. This you will find all the way through the justifications, Mr. Chairman. Heretofore we have treated a continuation project and a new project as just two categories and we have always referred to the concept of the moral commitment we make when we approve a project. Our attention was called to the fact that all of the projects we put under continuations do not have this moral commitment, so we have divided them between the moral commitment and those which require specific approval and compete with new projects for available new money.

FIRE PREVENTION DEMONSTRATION

Mr. FOGARTY. On page 54 you mention "other demonstrations to reduce fire injuries are being carried out in North Carolina and Rhode Island." What sort of demonstration projects are these?

Dr. JOLIET. The young man that was operating in Mississippi County, Ark., developed a very ingenious series of instruments which could be used to demonstrate preventive aspects of fire prevention. We have gotten and have trained two young men in the use of this demonstration kit and assigned them to Rhode Island. The demonstration is so good and so simple which shows how many fires happen within a house, that when it was given to us, our own wives and our own advisory committee—many of our own people said we never knew this before. For example, my wife said she did not know that spray hair mists were highly flammable.

Mr. FOGARTY. Spray hair mists?

Dr. JOLIET. Some of them.

Dr. JOLIET. A vivid demonstration is given by this kit as to what happens in a house when a circuit is overloaded. Another vivid example is given of what may happen in a house when gasoline is used as a cleaning fluid.

Mr. FOGARTY. How will these two men operate? Where do they go first? When they go into Rhode Island, where do they go?

Dr. JOLIET. They report to the State department of health and will be used within the State health department to develop demonstrations and to develop information in this area. They will also work in poison control activities. The other will be doing primarily poison control work. They work under the State health officer. They will have nothing to do with us.

Mr. FOGARTY. Every time we have a severe winter, we have more fires because of improper oil heaters.

Dr. Joliet. Oil heaters, overworked furnaces, and overused electrical circuits.

ACCIDENT PREVENTION PERSONNEL AT STATE LEVEL

Mr. Fogarty. You mention in your statement and justifications a general shortage of trained personnel available for work in accident prevention. What kind of people are these and what kind of training is needed?

Dr. Joliet. There are all kinds of public health people who have been doing public health work but have not included accident prevention activities in their usual public health activities. They include sanitarians, engineers, nurses, health educators—all the people who work in health departments. We believe almost all health departments will engage in accident prevention activities.

Mr. Fogarty. How many of the various types are needed to make some real impact on the deaths and disabilities due to accidents?

Dr. Joliet. I don't see how I can give you a valid answer.

Mr. Fogarty. Can you tell us how many are available now and how many we ought to have?

Dr. Joliet. Well, there ought to be at least one person in every State health department. That would an absolute minimum that I could possibly think of. Georgia, one of the first States that developed an accident prevention program under the Kellogg Foundation, had four full-time people that were working effectively in accident prevention. In the local health departments it would depend on the size of the health department involved. We do not believe local health departments will have a full-time accident prevention specialist. Small health departments will probably have to rely on State consultants or regional consultants. So it would be hard to give a specific figure.

Mr. Fogarty. What are these two people doing in Rhode Island? I would think after they are there a while they would be able to train a specialist for the State health department.

Dr. Joliet. Yes, sir; that is our hope.

Mr. Fogarty. Well, if you think one ought to be in every health department, how many additional would be required, and how much would it cost?

Dr. Joliet. We have approximately 25 full-time State health department accident prevention specialists now. If the average salary were, let's say, $10,000—that may be a little high—it would be 25 times $10,000 to supply the balance. That is the most minimal figure that I could possibly mention. But it would be a good start.

RESEARCH TRAINING GRANTS

Mr. Fogarty. Do you make any research training grants?

Dr. Joliet. We had no authority for research training grants until approximately November. Since November we have been making every effort to develop research training grants. That was one of the authorities the Division of Accident Prevention did not have. We do now have it.

Mr. Fogarty. How did you get it?

Mr. LONG. There was a basic amendment to the Public Health Service Act. At the time the two new institutes were created, that act provided for an amendment in the basic Public Health Service Act.

Mr. FOGARTY. Do you think it is a good idea?

Dr. JOLIET. Oh, yes, sir. It is one of the things we have been asking for. We are very anxious to do that because it is essential that research workers get special training in the accident prevention research.

Mr. FOGARTY. What is the situation here as far as funds available and funds needed?

Dr. JOLIET. It is my understanding that we can use funds in this request for training. At the time the budget was prepared we did not have authority. There isn't a specific amount of this total set aside for that purpose, sir.

Mr. FOGARTY. What do you think you need for this purpose?

Dr. JOLIET. We made several rapid calculations as to what we could reasonably spend next year and the figure turned out to be approximately $350,000, sir.

Mr. FOGARTY. Mr. Denton.

RESEARCH RESULTS

Mr. DENTON. The chairman spoke to you about the specific cases of what you have done. You gave us specific cases such as the use of seat belts and also care of people after accidents, especially as that applied to ambulances coming and getting people who were hurt. It would be helpful to me if you could give more examples of just what you are doing.

Dr. JOLIET. I would be very glad to. There was a lead that we had about a year ago and the National Safety Council had at the same time, that people were getting hurt falling through patio glass doors and through shower stalls. As a matter of fact, we had one of our own officers who had a little boy who fell through one of these glass doors. The Safety Council and ourselves were working with the Florida State Health Department and the Miami-Dade County Health Department did a study on people who were being injured by falling through glass doors. We found that quite a few people were being injured. Not many killed, but quite a few being injured.

Actually, the results of that study were pertinent only to Dade County. They could be expected to have more glass in Dade County than in other parts of the country. We reduplicated the study elsewhere and, indeed, many people were being injured falling through shower stalls, storm doors, patio glass doors. This information was transmitted to the fabricators of doors and to the makers of glass. The industries joined with us and with the National Safety Council. They developed a new and safer glass that can be used. They set up voluntary standards governing kinds of glass that should be used in various size doors. The FHA adopted specifications which will be required in houses financed by them and this has been done extraordinarily rapidly and without any publicity within the last year or year and a half, sir. That's an example. I could give many examples——

Mr. DENTON. Would you like to put it in the record?

Dr. JOLIET. Yes, sir.

Mr. Denton. It would be helpful to me.

(The information follows:)

Some Research Accomplishments in the Division of Accident Prevention

As in research on disease, most research in accident causation and prevention develops in a series of steps. Sometimes the findings can be translated immediately into action programs, sometimes they lead to the development of a hypothesis which must be tested and sometimes prepare the way for the next step toward the solution. Some of the findings from programs of directed research in the Division of Accident Prevention are—

1. A study of fire and explosion incidents in Mississippi County, Ark., led to the establishment of the role of defective electrical equipment, defective petroleum cooking stoves and heaters, faulty flues, and other environmental hazards around the stoves in the causation of accidental fires. The findings were translated into an active program in Mississippi County and since then a program of fire prevention has developed in the State of Arkansas and other areas.
2. An epidemiologic study of accidental injuries to elderly people in Albany, N.Y., led to the discovery of possible relationship between falls, fractures, and a condition called osteoporosis. This hypothesis is now being tested in Ford Hospital in Detroit.
3. An Epidemiologic study of accidents in homes for the aged in Philadelphia is producing much information regarding environmental hazards in such homes. Steps are already being taken to eliminate many of these hazards and the findings will be considered in the designing of such homes in the future.
4. An epidemiologic study of poisoning incidents established the role of growth and development in children and the changing types of products ingested as children grow older. It also highlighted the role of storage and supervision and the findings have been incorporated into a nationwide program of poison prevention.
5. A study of methods of treatment of poisoning due to the ingestion of petroleum products established the role of "lavage" in such treatment. The reduction in deaths over a number of years which might also indicate a decrease in morbidity is a reflection of increased knowledge of treatment.
6. A study of accidents involving tractors on highways in Iowa established the role of signaling and poor visibility in the causation of such accidents; steps are being taken to improve lighting, signal systems, and visibility for tractors on the highway. The reaction of the tractor operator in an emergency situation was such that controls on the tractor are being redesigned to make them similar to corresponding controls on the automobile.
7. Epidemiologic investigation of accidential injuries in Pennsylvania, St. Louis, Kansas, and Iowa are producing data on the role of supervision in childhood accidents and the effect of role change in elderly persons. Various articles have been identified as being hazardous in the home and the findings in general are being incorporated into specific programs of accident prevention.
8. A study of accidental injuries treated in Cleveland hospitals is yielding information about accident types and severity in different age groups and the extent of the load imposed by accidents on hospital facilities.
9. A completed study performed under contract with Antioch College provided the data necessary for designing and developing child anthropometric dummies, in the age groups: infants about 6 months of age, the child between 2 and 3 years, and the child 6 years of age. The dummies are for use in testing child safety belts, harnesses, or other restraints against death and injury in motor vehicle collision.

TRAFFIC SAFETY

The Fort Wayne project in Fort Wayne, Ind., did prove that promotional programing could be successful. Similar efforts on a national scale, in cooperation with the NSC and AMA, produced excellent results. Today these findings have produced widespread public knowledge of and confidence in seat belts. Eight States have already passed legislation requiring seat belts be installed in the front seats of all automobiles registered in those States. Similar legislation is pending in about 10 other States.

Since 1958 the Public Health Service has cosponsored with the American Association of Motor Vehicle Administrators a series of workshops on medical aspects of driver licensure. The first three workshops held were in Washington in 1958, 1960, and 1961. These were the initial efforts on a national level to encourage participation by State health departments in solving the many medical problems involved in driver licensure. These workshops brought together selected State health officers and State motor vehicle administrators to explore the possible role of health departments in assisting with medical problems of driver licensure and other medical areas of traffic accident prevention. These workshops are enthusiastically received by both State licensing administrators and State health officers. At their suggestion, and on the recommendation of the Association of State & Territorial Health Officers, a regional series of workshops were begun. Three such regional workshops have been held, and four more are planned. These regional meetings bring together State representatives from a number of States in a general geographic area to discuss problems outlined above. They can be credited with a significant increase in active participation by State health departments and State driver license authorities in cooperative programs on medical aspects of driver licensure and other medical aspects of traffic safety.

GUN SAFETY

A small cooperative project with the Dallas Health Department which has had the cooperation of the National Rifle Association has resulted in development of the first home gun safety training kit. It will be used by health departments, NRA instructors, and community groups to acquaint family members on ways in which to detect a loaded gun, to unload the gun, and safe storage. This is an important area because almost one-half of the accidental gunshot deaths occur in the home. This is the first intensive effort to carry out a program to reduce such home deaths and injuries.

POISON CONTROL AND PREVENTION

In December 1956, there were 53 poison control centers, all operating independently in 22 States. There are now 490 centers in 48 States plus two territories. Since 1957, when the National Clearinghouse for Poison Control Centers was organized, it has stimulated and aided in the establishment of new centers in addition to coordinating their activities through the several State health departments. All centers are periodically receiving new information from the Poison Control Branch regarding the toxicity of medicines and household products and the recommended treatment.

The poison control program has developed a reporting system which is currently being used by 280 poison control centers. A number of other centers report to their individual State health departments. We are now receiving over 40,000 reports a year. These reports, which include both epidemiological and clinical information, aid in the development of prevention activities and give excellent clinical information for bulletins on toxicity and treatment of poisoning. The findings from these reports have been made available to the Food and Drug Administration and have been particularly helpful in administering the Federal Hazardous Substances Labeling Act.

Charleston County, S.C., has been the scene of an intensive poison prevention educational campaign, using the techniques of mass communications media, conducting of group discussions, and presentation of programs in community organization. The Poison Control Branch developed a teaching unit for use in the kindergartens, which can be adapted to primary grades. This method, unlike the previously mentioned techniques which are directed to parents and others responsible for the care of children, is geared to the children, aimed at their educating other children and adults in their homes. This may prove to be a feasible approach in reducing the incidence of accidental ingestions.

SKI INJURIES

In spite of the fact that skiing has been an American sport for more than a century, now counts enthusiasts in the millions, and produces large numbers of serious injuries and permanent disabilities, relatively little factual information had been developed concerning the causes and nature of skiing casualties. By supporting a cooperative research project through funds supplied to a State health department, the Public Health Service recently obtained answers to the following critical questions:

How do individuals who are injured skiing differ from fellow skiers who are not injured?

Will a release binding give the skier any protection?

Are women skiers more likely to be injured than men?

What are the injury rates associated with skiing?

Among the critical facts proven are—

Release bindings protect male skiers.

Research is needed in order to design equipment which can extend the same protection to female skiers.

More effective organized efforts to raise proficiency levels among skiers can reduce injuries.

With this information, the agencies and groups which influence skiing—area operators, instructors, physicians, and the skiing organizations—are in a position to apply new scientifically developed knowledge to organized efforts to prevent injuries.

FACIAL INJURIES

Fully half of the thousands of injuries among the 2 million men and boys who play supervised football each year are injuries involving the teeth or face. A survey of 70 colleges with 3,694 football players revealed loss of or damage to 586 teeth during 1960, and that in 170 of these cases the schools spent $26,079 for treatment. Adoption last year of a mandatory requirement in most high schools that players wear mouth protectors is a major step forward. In cooperation with the American Dental Association and other groups, the Public Health Service is taking part in a program which will greatly extend the use of mouth protectors. These devices, when properly fitted and used, greatly reduce dental injuries in football. Through a cooperative research and demonstration progam in a school system, the Public Health Service is identifying specific obstacles to wider use of mouth protectors, and developing procedures for gaining universal acceptance.

BURN PREVENTION

The effectiveness of accident prevention projects and programs customarily is measured statistically in terms of reduction in deaths and injuries. Usually, the human element is considered only in collective terms expressed in cold figures. Rarely do we know who is saved, and how, and when.

During 1962, a large scale communitywide attack on accidents carried out with Public Health Service participation, was concluded in the Greater Cleveland area. This program continues under purely local support and sponsorship. It is exceptional in one way; not only could the prevention of deaths and injuries be measured statistically, but in one dramatic instance we know who was saved, and how, and when.

One of the things taught in this project relates to what to do in a home fire, and one of the specific points emphasized was: Never open a hot door.

Last Christmas morning, fire broke out in an Ohio home. Four children were trapped in an upstairs bedroom. One, a girl of 12, recently had seen at school the Public Health Service film on fire safety. She remembered its lesson and she felt the bedroom door. The door was hot. But she kept her sisters and brothers in the bedroom until firemen erected a ladder and rescued them.

"That fire film saved the lives of those four children," said the fire chief. This was one reward for a program in accident prevention which had reduced injuries and deaths in Ohio.

INCREASE IN NUMBER OF POSITIONS

Mr. DENTON. In your justification, I do not quite understand the positions that you have. You show 147 permanent positions and this year you want 153, which would be an increase of 6.

Dr. JOLIET. Yes, sir.

Mr. DENTON. Now, the full-time equivalent of all other positions—in 1963 that was 27 and 40 in 1964; that is an increase of 13. What do you mean by that?

Dr. Joliet. We have summer students—part-time people—things of that nature.

Mr. Denton. Part-time employees?

Dr. Joliet. Yes, sir.

Mr. Denton. You have the average number of all employees for 1963, 167; for 1964, 184, which is an increase of 17.

Dr. Joliet. Yes, sir.

Mr. Denton. With that you have the number of employees at the end of the year, 211 in 1963 and 227 in 1964, which is an increase of 16. Why are there so many more employees at the end of the year than the average number of employees?

Mr. Kelly. A good number of the part-time employees are summer employees and therefore, on June 30 are on the payroll and end of the year here refers to the end of the fiscal year. This is June 30 employment. So that although these full-time positions, the 40 full-time positions are only the equivalent of 40 people, more than 40 individuals will be on the payroll in that category on June 30.

Mr. Denton. But that is a tremendous increase over your permanent positions. It is 74—153 from 227. Do you have that many summer students in the department?

Dr. Joliet. Some of them are part-time State people we take in a cooperative arrangement with the States rather than put on our full-time payroll, sir.

Mr. Denton. Where is your office here in Washington?

Dr. Joliet. In HEW, South.

Mr. Denton. And you have how many people working in that office?

Dr. Joliet. Approximately 84, I believe.

Mr. Denton. And where are the rest of them?

Dr. Joliet. The rest of them are spread all over the country—regional offices, State health departments, local health departments. The more we feel we can get out in the field, the happier we are, because this is where the great need of people is, sir.

DUTIES OF PUBLIC HEALTH SAFETY PERSONNEL

Mr. Denton. What kind of work do they do?

Dr. Joliet. We try to train them in public health and accident prevention either in a university, in our own office, or where there is a full-time health department engaged in accident prevention activities. They are then loaned to a health department that wants to do something in accident prevention. We have been quite successful in getting acceptance when we put a knowledgeable person in. When we take the person out, if he has done his job well, the local people will employ their own replacement.

Mr. Denton. Is he like a safety engineer?

Dr. Joliet. He is like a safety engineer. He knows less about safety, presumably, than a safety engineer would know, but he knows vastly more about public health than a safety engineer. We are trying to bring two diverse things together.

Mr. Denton. Every department of Government has a safety engineer.

Dr. Joliet. Yes, sir.

Mr. Denton. And most factories have one now.

Dr. Joliet. Yes, sir.

Mr. Denton. Now, would you explain just how the men you propose to employ differ from those people?

Dr. Joliet. This, I think is a fairly easy thing for me. I hope I can get the difference across.

In industry, and in most places that have safety engineers, the approach is toward the environment. If a person cuts his hand on a saw, drill or punch press, the engineer analyzes the job and devices concerned. There is usually a mechanical device which will prevent recurrence. They have been very effective that way.

Mr. Denton. That is what the safety engineer does?

Dr. Joliet. Primarily. Outside the factory, in a person's home, it is not possible to apply the same preventive devices on toasters, Mixmasters, electrical wiring—things that you can do in factories. Therefore, people are needed to get inside the house and analyze what may go wrong and suggest safe methods. People will not be told what to do, and can't be directed what to do. Safety surveys within houses are done by nurses and sanitarians who usually work in homes.

Mr. Denton. As I take it, the Bureau of Labor Standards and Bureau of Occupational Health deal with injuries in factories, but you deal with injuries in the home or other places outside the factory?

Dr. Joliet. Yes, sir.

SEAT BELTS

Mr. Denton. I assume there are cases where a person with a safety belt meets with a fatal accident where he would not have if he had not had a safety belt. But I think your investigation has shown that there are many more cases where accidents are prevented by having a safety belt; is that correct?

Dr. Joliet. Well, the secondary accident is prevented. There are two—one where the car hits and the other when the person inside the car hits something else—or is thrown out of the car. As far as primarily preventing the accident, that probably happens. We can't document it. If you have any nylon seat covers and you are forced into evasive action, it is hard to stay behind the wheel. With seat belts it is easy to stay behind the wheel. Usually, seat belts are considered to ameliorate the effect of the accident on the person inside the car. I don't know if I am answering your question.

Mr. Denton. Yes.

Mr. Long. Mr. Denton, we estimate that your chances of survival are 30 percent greater if you have seat belts in your car.

Mr. Denton. So, as I get it, there are cases where a seat belt would not prevent an accident and even some where it would cause an injury. But in the great majority of cases safety belts prevent more serious injuries than when a man does not have a seat belt.

Dr. Joliet. Yes, sir.

Mr. Denton. Are you under the Bureau of Environmental Health?

Dr. Joliet. No, sir, we are not.

Mr. Denton. Community Health?

Dr. Joliet. Yes, sir.

GRANTS, SUBSIDIES AND CONTRIBUTIONS

Mr. DENTON. You have down here, item 41 in your justifications, grants, subsidies, and contributions. In 1963 that was $1,828,000 and for 1964 it is $2,075,000, or an increase of $247,000. What are subsidies and contributions? What do these embrace?

Mr. HAMBLETON. In our budget it is only for grants. We don't have subsidies.

Mr. DENTON. You do not have any subsidies or contributions?

Mr. KELLY. This is an accounting title used throughout the Government. What is classified here is the $2,075,000 worth of research grants.

Mr. DENTON. Why do you not just call it grants then, if that is all it is?

Mr. KELLY. For each one of the items we use the accounting title.

Mr. DENTON. Not being an accountant I cannot argue about it. It would be much clearer to me as a layman if you said what it is.

RESEARCH CONTRACTS

Over here in another item you have research contracts.

Dr. JOLIET. Yes, sir.

Mr. DENTON. That was $168,000 in 1963. It is $732,000 in 1964. It has gone up $564,000. What does that embrace?

Dr. JOLIET. Essentially, the very great increase is due to contracting for the development of the simulation equipment and for simulation. Some of it is contracting for answers to questions that we urgently feel are necessary and which we can't get otherwise.

Mr. DENTON. How does that differ from your grants?

Dr. JOLIET. The grants are undirected research. The grant money is a pool provided by Congress for the use of outside investigators to do research. We can't tell them what to do. There may be questions that need to be answered that outside people are not answering and if we feel urgently about them—we do feel urgently the need to get answers to those questions and we have no facilities ourselves in accident prevention. We have to pay to get it.

Mr. DENTON. Before you make a grant do they not submit a project to you that goes to a committee that checks over it to see if it is a good project?

Dr. JOLIET. Yes, sir.

Mr. DENTON. You do know specifically what they are going to investigate, do you not?

Dr. JOLIET. Yes, we do.

Mr. DENTON. I still do not see the difference between that and the contract, because in the contract you make a contract for something specific being investigated, do you not?

Dr. TERRY. May I intrude here?

DIFFERENCE BETWEEN GRANT AND CONTRACT

I think basically, the difference between a grant and a contract, is this: That in the grant an investigator knows something that he wishes to do and he makes a proposal. If it fits into our program we approve it and fund the proposal.

On the other hand, there are many instances where we need a specific thing done that we—in other words, we need to describe a product that we would like to have delivered. It may be a study or it may be development on an instrument or something else. But in effect a contract initiates with us in terms that we can describe—an end product that we want and have delivered. We say to this person, "Will you deliver it and how much will it cost?" And the contract is negotiated on that basis in contrast to the fact that in many research grants there is no way to describe any end product at all. You are merely supporting a research investigation which works toward your program activity, but does not have a definite end product.

Mr. DENTON. Do you do intramural research?

Dr. JOLIET. We do a painfully small amount.

Mr. DENTON. How many of your staff are doing that work?

Dr. JOLIET. One, two, three—I would say the equivalent of five or six full-time people.

Mr. DENTON. That is all that you have?

Dr. JOLIET. Yes, sir. The increase in personnel of two people is to increase that a little bit.

RATING OF RESEARCH PROJECTS

Mr. DENTON. On the grants, they go before a board to determine if they are good projects and you rate people according to letters "A", "B", "C", and "D" projects or 1, 2, 3, 4 and so forth.

Dr. JOLIET. I think they are given a numerical priority—approximately that. The mechanism is that.

Mr. DENTON. How many men are on this board that pass on these projects?

Dr. JOLIET. There are 13.

Mr. DENTON. How many projects do you have that you did not have enough money to finance that you thought were A–1 projects?

Dr. JOLIET. We anticipate two this year, sir.

Mr. DENTON. You have two—do you classify them "A", "B", "C", and "D", or how does it work? How do you classify them?

Dr. JOLIET. They use a numerical system—1 through 4.

Mr. DENTON. One to four?

Dr. JOLIET. One through four.

Mr. DENTON. How many projects in No. 1 do you have that you do not have enough money to finance?

Dr. JOLIET. I do not know what rating they will be. We can only estimate at this time that there will be approximately two that we do not have money for.

Mr. DENTON. In 1, 2, 3, 4?

Dr. JOLIET. Yes, sir. I imagine the ones will have been——

Mr. DENTON. Taken care of?

Dr. JOLIET. Yes, sir.

Mr. DENTON. How many projects have you granted money for research?

Dr. JOLIET. I think there are around 65. We haven't had the last study section this year yet, but I think through the last study section there are approximately 65. I can give you the figure.

Mr. LONG. There are 38 in 1963 to date. And we have one more study section.

Mr. DENTON. How many will you grant this year under this request that you have submitted?

Dr. JOLIET. Approximately 14.

Mr. LONG. The total for this year is estimated at 39.

Dr. JOLIET. Through this year.

Mr. LONG. For 1963.

Mr. DENTON. How many grants will you give in 1964 in addition to the 39 that you have?

Dr. JOLIET. At approximately $50,000 a grant.

Mr. DENTON. There is approximately $2 million.

Dr. JOLIET. The only additional grants—three.

Mr. DENTON. You grant three more this year?

Dr. JOLIET. Yes, sir.

Mr. DENTON. That will be 42 then that you will have.

Dr. JOLIET. Yes, sir.

Mr. DENTON. And you do not have enough money for two?

Dr. JOLIET. Approximately; yes, sir.

Mr. HAMBLETON. The 1963 figure is 36 and the 1964 figure is 39.

Mr. DENTON. So you now have 36. You will increase that to 39 with this appropriation that you are asking and you do not have the money for two projects which have been approved by your board?

Dr. JOLIET. We anticipate that; yes. We don't know how many will be submitted to the next section. I am not trying to be evasive. We have no way of knowing how many will arrive in Washington to be reviewed.

Mr. DENTON. When does your board meet and review these projects?

Dr. JOLIET. The next meeting is in April.

Mr. DENTON. I think that is all.

Mr. FOGARTY. Mr. Lesinski.

BRAKING DEVICE

Mr. LESINSKI. I have no questions regarding the testimony.

I have one thought in mind that I would like to bring out without expecting the answer for it. I was contacted last week when I was home. The individual claimed he was representing a man who had perfected a system for brakes on the wheels of vehicles so your wheels would not lock—some means that when they lock, the pressure is released on that brake. Have you heard of that?

Dr. JOLIET. Yes, sir; I have.

Mr. LESINSKI. Have you studied it at all?

Dr. JOLIET. No, sir—as a physician, and this being a mechanical device—it makes it quite difficult for us to evaluate that. I could say that if such a device could be developed it would be helpful, as a car driver.

Mr. LESINSKI. My purpose is, who should be notified of this in the Bureau?

Dr. JOLIET. Unless we are in a position to evaluate the goodness and the mechanical desirability, we would be reluctant ourselves to push any device of this nature. We have many that are referred to us and say, "Would you endorse this product?" "Is it a good thing?" We have no mechanical way—we have no mechanism by which we can pass judgment on it.

Mr. LESINSKI. Any device which would prevent one wheel from grabbing would be a good thing.

The answer he gave me—not mentioning names—he went to one manufacturer of automobiles and they tried it out and said it is good but too expensive for their cars and he is contemplating going to another manufacturer who makes a higher quality car—heavier car and they may use it. But it has been perfected already.

Dr. JOLIET. There is no doubt, that in all fields that do things that are not recognized, if there were a facility where these devices could be tested, it might be possible that good things that come along would be more rapidly adopted.

Mr. LESINSKI. Well, would it be fair for me to say that if I informed you as to who the manufacturer was that uses this on their brakes and you were in a position to buy a car, would you buy one of these cars?

Dr. JOLIET. If someone could assure me it was a good mechanical device that worked, I would be delighted to buy one. We all know what happens when you skid a car on snow or ice or on a greasy road. It is a devastating thing when one wheel grabs. Anybody would have to assume that a device which actually would prevent a single wheel from grabbing first would be a desirable thing if that is it.

Mr. LESINSKI. The point that I am driving at is, would the agency buy it? Would the agency buy it—not you personally—the agency?

Dr. JOLIET. You mean on our own cars, sir?

Mr. LESINSKI. Yes.

Dr. CHRISTENSEN. Mr. Kelly will answer that.

Mr. KELLY. The question as to whether or not it became a device that the Government wanted to show its interest in would be evaluated by the General Services Administration. They write the specifications for the cars purchased by the Federal Government.

Mr. LESINSKI. It would cost more, though. The car would cost more with these brakes on it.

Mr. KELLY. All I am saying is this—this is a device on which the decision would be left up to the General Services Administration.

Mr. LESINSKI. Well, maybe I had better get back to this individual and have him contact you folks and see what you think of it and then of course use your own judgment.

That is all, Mr. Chairman.

Mr. FOGARTY. Mr. Michel.

COMMON AGENTS OF ACCIDENTAL POISONING

Mr. MICHEL. Doctor, you spoke several times of accidental poisonings. Which ones are the most prevalent?

Dr. JOLIET. Aspirin in small children.

Mr. MICHEL. Aspirin in small children?

Dr. JOLIET. Yes, sir.

Mr. MICHEL. Too great an amount?

Dr. JOLIET. Yes, sir. It is an amazing thing. The taste itself is so horrible, you wonder how children would eat it. Under two they don't have much taste discrimination.

Mr. MICHEL. Do we have any figures on this that would dramatize it?

Would you throw out a few or supply it for the record?

Dr. JOLIET. Yes, be glad to. It is estimated that there are 500,000 accidental poisonings to children under age 15 each year. Aspirin is the largest single cause. For example, of the cases reported to the PHS, for children under age 5, from 1959 to 1961, aspirin caused 15,789 or 20.7 percent of accidental poisonings.

Mr. MICHEL. That would be in children ranging in age from what to what in the biggest category?

Dr. JOLIET. Of my own knowledge, I would say usually under 2 years, sir. Probably most of them under 1, actually. Not under 1, but under 2. After they get to 2, it begins to taste horrible to them as it does to us and they taper off. They eat the unflavored ones, too. The assumption is that these are only flavored aspirins. They eat anything.

Mr. MICHEL. What would be another accidental poisoning of some magnitude?

Dr. JOLIET. As long as I am conveniently supplied with this list, with your tolerance, I will read it.

Medicines, internal, aspirins are the only thing that stand out. Next is cleaning and polishing agents and they are way up on the list. Petroleum products are a substantial number. I can give you the numbers but it is not related.

Mr. MICHEL. On the cleaning and polishing ones, would those affect children again?

Dr. JOLIET. Yes, sir. Most women keep them under the sinks. I presume your wife does. Mine does. They are accessible to a little toddler that is wandering around the kitchen.

Mr. MICHEL. Well, let's put it this way. Of all the accidental poisonings, is there any great percentage among adults? Or is it all children, practically?

Dr. JOLIET. Most of them occur in children under 5. There are relatively few in adults and the number increases again over 65. I don't have the figures broken down that way, but I would be glad to supply them by age, if you like.

Dr. CHRISTENSEN. Ninety percent of them were under 5.

Mr. MICHEL. That is a significant thing.

Dr. CHRISTENSEN. One other thing along this line. The division has been working with several manufacturers for the purpose of developing a foolproof medicine cabinet, so if the drugs are put in the medicine cabinet young children would not be able to open them. There is a little fancy catch that the kids can't get to. These, as I understand it, will be available.

Dr. JOLIET. Two of them are going on the market.

Mr. MICHEL. I am really kind of surprised that there is a great number caused by aspirin. Has there been any publicity given of any consequence to the American people that this is a danger to the extent that it is, when we talk about 15,000 lives resulting from this. It would seem to be a sizable figure.

Dr. JOLIET. Those are poisonings, not deaths.

Dr. Terry. How many deaths were there?

Mr. Michel. How many deaths would have resulted from accidental poisoning?

Dr. Joliet. How many deaths due to accidental poisoning?

Mr. Long. Approximately 1,300 total from all causes.

Mr. Michel. What is the antidote for aspirin poisoning in children?

Dr. Joliet. Evacuating the stomach contents is the thing that you try to do in aspirin poisoning. As an administrative physician for the last 20 years I can't give you the exact antidote at the moment. It is available readily—any private practicing physician would be able to say right away and of course, information of this nature—I am embarrassed, but not being in practice I can't recall offhand.

Mr. Michel. These 10 men who have been given training at New York University and being assigned to State and local health departments, where have those men been assigned or employed?

Dr. Joliet. Arizona, Delaware, Florida, Kansas, Kentucky, Mississippi, South Carolina, and I think Tennessee. We have others that did not go through the course and I am not absolutely positive at the moment which went where. But I think those were pretty close to the 10.

Mr. Michel. But they are widely distributed among the several States?

Dr. Joliet. Yes, sir. We have great pressure put on us and I don't know the right way of assigning them, actually. It is somewhat in the order of priority and where to our knowledge they will use them properly.

RESEARCH GRANTS AND CONTRACTS

Mr. Michel. In this area of accident prevention, how many research grants are there in being at this moment?

Dr. Joliet. Thirty-six, I believe, was the figure.

Mr. Michel. Now, for what duration do those grants usually run?

Dr. Joliet. Approximately 1 to 3 or 4 years, sir. Most of them average out somewhere around 2 years. That would be a guess. Our's are a little shorter than the average.

Mr. Michel. Would there be a difference between research contracts?

Dr. Joliet. For time?

Mr. Michel. Yes.

Dr. Joliet. I don't think in essence, no. The time factor would be related to what one was attempting to do rather than the mechanism.

Mr. Michel. Research grants again, are they made principally to individuals?

Dr. Joliet. Principally to individuals, yes, sir. There is an individual investigator named under the auspices of the sponsoring agency.

Mr. Michel. And the sponsoring agency is usually what?

Dr. Joliet. Very frequently it is a State university—a medical school. I think that would be the usual.

Mr. Michel. Any industry?

Dr. Joliet. In the past there have been grants to private organizations that did research. I don't recall an industry at the moment that received a grant. I don't remember.

Mr. Kelly. We have a new policy, Mr. Michel, that we have adopted that we don't use the grant mechanism with profitmaking organizations, but only contracts.

Dr. Terry. This is a uniform policy for the Service which has just been instituted during the past year.

Mr. Michel. Have we had supplied for the record the number of research contracts that are currently in being in this area of accident prevention?

Dr. Joliet. It can be supplied, sir.

Mr. Michel. Would you?

Dr. Joliet. Yes, sir.

(The information follows:)

The Division of Accident Prevention has 11 research contracts currently in being. Four of these contracts are with profitmaking organizations.

Mr. Michel. Would those research contracts be again, to individuals or to institutions?

Dr. Joliet. Normally they are to individuals but it could be to an institution. All of them are under the sponsorship of institutions.

Mr. Michel. What are we talking about in the average figure of a research contract in dollars and cents?

Dr. Joliet. Well, the grants have averaged out somewhere around $50,000. The mechanism, I don't imagine, would affect the average amount any more than the other factors we had just discussed.

Dr. Christensen. The contract is for a specific type of information—a directed type of research. The cost of these vary considerably. Some may be relatively low and others may come to a considerable sum of money.

Dr. Joliet. There have been two things we talked about, Mr. Michel, that may have inadvertently misled you. It is possible to do contracting under the research grant mechanism. Our own contracts, which we have done under operating funds, are usually very small contracts. We have had them as low as $1,000, sometimes lower. On the average, I would say they are $2,000. They have to be small because we can only take them out of operating funds.

Mr. Michel. I think that is all, Mr. Chairman.

Mr. Lesinski. One brief question. I am sorry. You say that children under 2, their taste buds are undeveloped?

Dr. Joliet. I don't really know what it is, but a child under 2 will eat almost anything. He will drink kerosene with great delight. He will chew aspirin and enjoy it. Furniture polish—anything. It is amazing, and I suppose it is underdeveloped taste buds. I should know.

Dr. Terry. It is a hard thing to define as to why it is true, but the way they will drink lye or such corrosive agents like that, that you could not stand to have in your mouth for even a few moments; it is just amazing but children do it with regularity, when they have access to it.

Mr. Lesinski. Having had five children, and the problem of getting them to eat before they are 2, is what amazes me. That is why I asked the question.

Dr. Joliet. The only thing you have to do is hide it or stop trying because they always eat the things you don't want them to.

MOST PREVALENT HOUSEHOLD ACCIDENTS

Mr. MICHEL. Mr. Chairman, can we have supplied for the record what the most prevalent cause of accidents around the house is? One time, it used to be slipping in the bathtub, was it not?

Dr. JOLIET. Falls. Yes, sir.

We can supply more definitive information if you like.

Mr. MICHEL. Would you put in a list of the most prevalent accidents around the home?

Dr. JOLIET. Yes, sir. Gladly.

(The information follows:)

The following data are taken from National Vital Statistics Division tabulations of death certificates. The data show the number of deaths for home accidents. Fires and falls are the leading causes of accidental deaths occurring in the home.

Deaths from nontransport accidents at home by type of accident,[1] *United States—1957*[2]

Falls	10,894
Fire and explosion of combustible material	5,052
Mechanical suffocation	1,150
In bed and cradle	996
Other and unspecified	154
Firearm	1,062
Inhalation and ingestion causing obstruction or suffocation	904
Poisoning by gases and vapors	779
Poisoning by solids and liquids	739
Drowning and submersion	396
Hot substances, corrosive liquid, and steam	379
Electric current	258
Cataclysm	211
Blow from falling object	146
Cutting and piercing instruments	76
Machinery	62
Other and unspecified	664
Total	22,772

[1] Includes only those deaths for which the accident was reported as occurring at home. In 1957 there were also 8,994 accidental deaths with places of accident unspecified.

[2] Does not include Alaska and Hawaii.

The following data are estimates based on interviews conducted by the National Health Survey.

TABLE II.—*Average annual number of persons injured in the home,*[1] *United States, July 1959–June 1961*

Type of accident	*Residence, all areas, in thousands*
All types	20,182
Moving motor vehicle	70
Uncontrolled fire, explosion, or discharge of a firearm	128
Nonmotor vehicle in motion	324
Machinery, in operation	474
Cutting or piercing instrument	1,497
Foreign body in eye, windpipe, or other orifice	473
Injury caused by animal or insect	1,368
Fall on stairs, steps, or from a height	3,024
All other falls	3,865
Bumped into object or person	1,433
Struck by moving object	1,705
Handled or stepped on rough objects	1,642
Caught in, pinched, or crushed between 2 objects	874
Came in contact with hot object or open flame	1,013
Onetime lifting or exertion	810
Twisted or stumbled	758
All other type of accidents	725

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[1] Includes only persons with injuries involving 1 or more days of restricted activity, or medical attention.

Mr. Fogarty. Is there anything else you would like to say, Doctor?

Dr. Joliet. Thanks.

Mr. Fogarty. Thank you very much.

CHRONIC DISEASES AND HEALTH OF THE AGED

WITNESSES

DR. EUGENE H. GUTHRIE, CHIEF, DIVISION OF CHRONIC DISEASES

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUMITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	3, 430	5, 155	5, 608
Positions other than permanent	209	335	335
Other personnel compensation	7	6	31
Total personnel compensation	3, 646	5, 496	5, 974
12 Personnel benefits	539	845	956
21 Travel and transportation of persons	764	972	1, 010
22 Transportation of things	106	119	126
23 Rent communications and utilities	94	111	132
24 Printing and reproduction	45	120	89
25 Other services	1, 572	1, 465	1, 386
Services of other agencies	--------	--------	7
Research contracts	1, 581	1, 995	2, 995
Payment to:			
Bureau of State Services management fund	244	330	641
National Institutes of Health management fund	19	25	30
26 Supplies and materials	230	367	372
31 Equipment	322	376	362
41 Grants subsidies and contributions	20, 548	38, 742	41, 827
Total obligations	29, 710	50, 963	55, 907

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	659	840	869
Full-time equivalent of other positions	37	60	60
Average number of all employees	526	777	824
Number of employees at end of year	668	950	979
Average GS grade	7. 8	7. 9	7. 9
Average GS salary	$6, 671	$7, 006	$6, 996

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(a) Research	1,564	1,952	2,257
(b) State control:			
(1) Cancer	3,389	3,500	4,000
(2) Heart	4,598	7,000	7,000
(3) Other chronically ill and aged	4,859	13,000	13,000
(c) Project:			
(1) Cancer	3,013	4,750	5,000
(2) Neurological and sensory	892	2,600	3,630
(3) Other chronically ill and aged	2,294	6,000	7,000
2. Research, training, and technical services	6,401	11,884	14,020
Total program costs, funded [1]	27,010	50,686	55,907
Change in selected resources [2]	2,700	277	
Total obligations	29,710	50,963	55,907
Financing:			
Comparative transfers from other accounts (−)	−19,199	−28,036	
Unobligated balance lapsing	2,444		
New obligational authority	12,955	22,927	55,907
New obligational authority:			
Appropriation	10,958	22,942	55,907
Transferred from "Community health practice and research" (75 Stat. 733–736)	2,000		
Transferred to "Operating expenses, Public Buildings Service" General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−3	−15	
Appropriation (adjusted)	12,955	22,927	55,907

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[1] Includes capital outlay as follows: 1962, $231,000; 1963, $380,000; 1964, $390,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $256,000 (1962 adjustment, −$55,000); 1962, $2,901,000; 1963, $3,178,000; 1964, $3,178,000.

GENERAL STATEMENT

Mr. FOGARTY. We will now take up Chronic Diseases and Health of the Aged.

Dr. Guthrie, are you ready?

Dr. GUTHRIE. I have a statement to submit for the record, sir, and I would like to present a short summary of that statement.

Mr. FOGARTY. We will place your full statement in the record.

(The statement referred to follows:)

STATEMENT BY CHIEF, DIVISION OF CHRONIC DISEASES, PUBLIC HEALTH SERVICE, ON "CHRONIC DISEASES AND HEALTH OF THE AGED"

Mr. Chairman and members of the committee, I speak on the appropriation Chronic Diseases and Health of the Aged. In accordance with the request of this committee we are presenting this year a combined budget, which includes all of the control activities in heart disease, cancer, and neurological and sensory diseases.

While the administrative responsibility for such activities has been ours in the past, the funding until this year has remained in the budgets of the respective National Institutes of Health.

Combining the budgets of these three programs along with a research grants transfer from the National Institutes of Health with the budget and programs previously supported by the Chronic Diseases and Health of the Aged appropriation is a most significant development in the national effort to create an identifiable, orderly, and effective approach to the total problem of preventive and care services for the chronically ill and aged in this country.

According to the National Vital Statistics Division of the U.S. Public Health Service, the leading causes of death in the Nation today are: heart disease, cancer, vascular lesions affecting the central nervous system (stroke), accidents, certain infant diseases, influenza and pneumonia, arteriosclerosis, diabetes, congenital malformations, and other circulatory diseases.

Operating under the combined budget represented in the appropriation Chronic Diseases and Health of the Aged, the Division of Chronic Diseases is the Federal organization most directly responsible for developing and implementing national control programs in 7 of these 10 disease categories.

The chronic diseases, however, do not stop with domination of the death list. They dominate as well the list of diseases responsible for long term disability.

Of the 25 most prevalent chronic conditions which cause disability limitation, as reported by the National Health Survey, responsibility for developing and implementing effective control programs for 12 of these conditions is now vested in this appropriation.

We are acutely aware of the magnitude of our job in mounting an effective national program. Adding together the prevalence figures for all of these conditions points up what appears to be an overwhelming task. We lack much of the knowledge we must have for control of cancer, heart diseases and a host of other crippling and killing conditions. As specific knowledge becomes available there arises the further problem of creating tools for practical application. In addition, there exist the cold enemies of public apathy and resignation toward the chronic diseases, of competition for scarce health resources, of duplication of services in some areas, and a total absence of services in others.

It is our conviction, however, that an effective national program can be carried out, that it must be carried out, and that this single budget approach will materially assist and speed the solution to many of the current problems.

CARE SERVICES

The Chronic Disease Division actually came of age in 1962 with the appropriation of substantially increased funds for assisting communities and States in initiating, extending, and improving out-of-hospital services programs for the chronically ill and aged. This "new look" program of project and formula grant funds authorized under Public Law 395 has progressed remarkably during the 1½ years of its existence and is bringing about a quiet revolution among State and community health departments previously dedicated to more traditional public health activities. It is providing new incentive for leadership in developing community health services among voluntary and public health agencies and professional organizations as well.

Speaking in general terms, it can be said that care of the sick at home, information and referral activities, simple homemaker services programs, nursing home improvement, and State and community self-appraisal of the needs of their chronically ill and aged, all of which were new to most health departments a few years ago, are now generally accepted as health department responsibilities. As a result, more people are being cared for at home and more health agencies are hastening to establish the out-of-hospital care services which are sorely needed in most communities now. Along with this there is a growing public awareness evidenced in terms of community leadership and insistence that adequate programs for caring for their aged and chronically ill be established.

During 1962 we approved 44 project grant applications. Typical of the kinds of projects supported are the following:

1. Connecticut State Health Department—statewide homemaker services development. Though the practicality of homemaker services for the chronically ill and aged has been proved, established health department programs (statewide) are not numerous. The Connecticut State Health Department proposes to develop a statewide program of planned assistance to communities to establish and maintain homemaker services as an important resource in the care of the aged and chronically ill outside the hospital. This experience will serve as a guide to other States in the development of statewide programs.

2. Columbia County, New York State—Rural out-of-hospital services. Most of the current methods for delivering services outside the hospital have been tried and used successfully in areas of high population density. There is a genuine need for developing and establishing adequate methods for delivering such services in rural areas. This need is recognized in a project being imple-

mented by the Rip Van Winkle Foundation in Columbia County. The results of this project, which includes day care, counseling, dental care, nutrition, and nursing, are expected to have broad application nationally.

3. McMiniville, Ore., Yawhill County Health Department—Rural health of the aged. The need to define a workable approach to the special health problems of the rural aged is recognized in this project which proposes to establish a Senior Citizens' Center in a county health department where services are limited. Services to be included are periodic health appraisals, home nursing, and homemaker services.

In 1963, substantially increased funds are available for these new kinds of studies and demonstrations. The successful completion of these projects will have, we believe, a significant impact on the growth and acceptance of similar activities in other areas of the United States.

The increase of $1 million requested for 1964 in chronically ill and aged project grant funds will enable us to support approximately 30 new projects for studies and demonstrations of new and improved methods for delivering services to the chronically ill and aged.

The use of the chronically ill and aged formula grant-in-aid funds to implement State programs for improving the quality and quantity of out-of-hospital services has exceeded our expectations. During 1962, in spite of the unusually short period of availability, approximately 85 percent of allotted funds were put to work by the States.

Review of the plans of separate States for utilization of these funds for 1963 is indicative of continued progress. Though wide variation in program emphasis is evident and progress in developing community programs differs State by State, the broad purposes of the Community Health Services and Facilities Act are being served in a most heartening fashion.

For example, plans for 1963 from 34 States show a continuing emphasis on programs to improve the quality of care in nursing homes, 8 States are emphasizing homemaker services, 20 States plan to initiate or expand early disease detection programs, 23 States are initiating restorative services activities, and 14 States plan to employ nutritionists and dietitians for specific out-of-hospital services programs.

However promising this brief, general report of significant progress in the area of out-of-hospital services for the chronically ill and aged may sound, the magnitude of the problem described many times previously is still momentous. It will require some time before quality community health services are available when and where they are needed by growing numbers of the population who can be and prefer to be cared for in other than a hospital setting.

We are attempting to stimulate with all of the tools available to us the planned and most expeditious implementation of a national effort to achieve this goal.

RESEARCH GRANTS

In line with overall policy to include research grant activities in all community health areas, our budget estimate includes grants for research activities related to the chronically ill and aged. The base for these activities is being transferred from the National Institutes of Health.

We are looking forward to using this new tool for supporting independent research in this important area.

HEALTH OF THE AGED

In order to give our aging program greater visibility and increased impetus we have established a new branch devoted entirely to full time activities relating to health of the aged.

This marks the first time that an entire operating unit within the Public Health Service has been geared exclusively to the development of comprehensive community health services for senior citizens.

We have been most fortunate in being able to secure the services of a widely known gerontologist, Dr. Austin B. Chinn, to head this new program. Dr. Chinn was most recently associate dean of Western Reserve University Medical School and also served as medical director of the Benjamin Rose Hospital in Cleveland, Ohio.

This new program will begin with a good reservoir of experience and interest in the health problems of the aged. Our categorical programs, for example, with their efforts to prevent and control heart disease, cancer, diabetes and arthritis, and neurological and sensory diseases have all worked directly and indirectly with the problems particular to the aged and the aging.

During the past year the long-term illness program of the Division devoted particular attention to the problems of the aged by supporting such projects as: combined public health nursing and social worker services for members of a senior center (Lee House, Seattle) and a study to determine to what extent the elderly, themselves, constitute a manpower resource to assist in providing community health services to the aged and chronically ill (Brandies, Newton, Mass.)

In addition, this Division which serves as the principal center for programing both formula and project grant funds under Public Law 395 has sought to stimulate the effective growth and development of our-of-hospital services programs designed primarily to serve the aging and aged of the community.

NURSING HOMES AND RELATED FACILITIES

Nearly half of the 307,000 beds in nursing homes providing skilled nursing care are unacceptable, mostly because of environmental health and safety factors. Of the Nation's 23,000 nursing home administrators only 10 percent have received formal management training. Professional social work, nutrition, and physical therapy services are available in only a small proportion of nursing homes. Similarly, the presence of a registered nurse in the nursing home is rare, and licensed practical nurses are by no means the rule. Concurrent with this situation is a growing and insistent demand not only for more services in nursing homes but for higher quality of services.

Urgently aware of our responsibilities to help meet these twin demands, we recently organized and expanded our Nursing Home Section and elevated it to a full program status. For 1963, the program is supporting a variety of activities to improve standards of care services in nursing homes and related facilities.

In nine communities we completed a series of studies demonstrating how hospitals and nursing homes can work together to improve patient care in both facilities. Seven of the nine projects are continuing on their own. In five communities the studies are serving as models for statewide programs of hospital-nursing home affiliation.

We also have supported a variety of training courses for improved services and administration of nursing homes. These include courses in specialized accounting methods to enable nursing home administrators to develop sound accounting systems and standard cost figures; a 3-week course attended by 40 State nutritionists, having primary responsibility for giving consultation to nursing homes, who began planning statewide programs to improve food service in the nursing home; and two pilot courses in nursing home administration, the first held at the University of Oklahoma this past summer, and the second soon to take place at the University of Michigan.

The need for training and teaching aids, such as manuals, brochures, and films, has prompted our continued efforts with the American Pharmaceutical Association and the American Nursing Home Association to plan and prepare a practical manual of pharmacy procedures for use in the nursing home, and the publication of the "Nursing Home Environmental Health Syllabus," which will be distributed and used as a text for State training programs.

PREVENTIVE SERVICES

In the Division's programs for gerontology and nursing homes, our goal is to improve care services to those who are chronically ill and disabled. At the same time we are aware that, whenever possible, it is better to stop the occurrence and progression of chronic disabilities in the first place.

Toward this goal of preventive services, we operate separate categorical disease control programs for heart disease, cancer, diabetes, and arthritis, and neurological and sensory diseases.

Highlights of activities in each of these program areas offer a measure of progress toward the achievement of a national goal.

HEART DISEASE CONTROL

Taken together, the five major groups of diseases of the heart and circulatory system are the most serious health problem in the United States. At the same time, the outlook for positive community action to reduce this burden has never been better. Intensive application of research findings from laboratories and clinics, and expanded use of improved case-finding and treatment techniques that have been demonstrated in field tests can do much to prevent or arrest some of these diseases, and restore many thousands of patients to useful life. The heart disease control program provides professional, technical, and financial assistance to health departments in all States and territories with State control grant funds and direct operating funds to help them apply this new knowledge for the benefit of patients in as many communities as possible.

An outstanding example of the need to teach and apply such knowledge is stroke. Nearly 2 million Americans have survived a stroke, most of them with residual disability. With early treatment, including restorative services, 75 to 85 percent of stroke patients can achieve at least self-care and some can return to jobs. In the pioneer Georgia stroke program, all 750 public health nurses and many hospital and licensed practical nurses have received training in simple restorative techniques for the stroke patient. Other stroke demonstration programs are now going on in Connecticut, Colorado, New Jersey, Pennsylvania, Kentucky, North Carolina, and Oregon.

After discovery of disease by thorough early examination, many of the 25 to 40 percent of "obstructive" strokes that are caused by lesions in extracranial arteries can be prevented by surgical means. A pilot demonstration of this type is being supported in Oregon, and similar stroke prevention programs are planned in other States.

Services to patients suffering from acute heart attacks will be strengthened by the establishment of intensive care units in university teaching hospitals on a demonstration basis. This is the first step in a broader program of improving and developing nursing services following the patient's discharge from the hospital until his recovery and return to work.

Preliminary studies already show that among patients surviving the first 24 hours, the fatality among those admitted to an intensive care unit is reduced 40 percent compared to patients admitted to the general hospital service. Work is also going forward to evaluate the teaching of closed chest cardiac resuscitation to laymen, since a physician is often not close enough at hand during the first few minutes when the technique is effective in saving lives.

Some 35 million electrocardiograms—the most widely used and often the most significant diagnostic test in the management of heart disease—are taken each year in the United States alone. Routine interpretation uses up millions of man-hours of cardiologists' time needed for diagnosis and care of patients. The automated analysis of the use of electrocardiograms would therefore be a significant breakthrough that could materially augment medical care. One of the most spectacular demonstrations at the scientific sessions of the American Heart Association in October 1962 was the Public Health Service exhibit, "Electrocardiography With Electronics," in which heart signals taken on a patient in Cleveland were relayed by telephone to a computer system in Washington, electronically analyzed, and the results relayed back to Cleveland in 30 seconds. Clinical demonstrations, in cooperation with George Washington University, are planned in 1964. During each of the next 3 to 5 years, about 10,000 electrocardiographs will be processed and within that period the technique should become fully operational.

In 1964, we also expect to develop a system to demonstrate the feasibility of of enabling the physician in his own office to transmit EKG signals direct by standard telephone to a computer system and receive the results back by telephone. The long-range probability is that physicians in every part of the country could have available a rapid and economical equivalent of EKG interpretation services now seldom available outside large medical centers.

Because above 225,000 of the three-quarter million persons with congenital and rheumatic heart defects are unknown, efforts to develop screening and detection methods are of extreme importance. Following the successful screening of 33,000 schoolchildren in Chicago by the tape recording of heart sounds, the program assembled inexpensive, lightweight equipment and tested it in 2 communities. To evaluate the technique and determine whether its routine use is feasible and economical, field studies of schoolchildren are currently underway or scheduled in Illinois, Utah, Iowa, Ohio, Oregon, Maryland, Colorado, Georgia, and Washington.

CANCER CONTROL

If present knowledge for combating cancer were used to the utmost it is estimated that deaths from this cause in the United States could be reduced by 75,000 per year.

The most promising known techniques for detection and cure are applicable to cancers of the uterine cervix, the oral cavity, the breast, the colon-rectum area, the lung, and the skin. Due to easy visibility of most skin cancers, and consequent early detection and treatment, cure rates are relatively good. In the other five sites, however, fatalities are distressingly high. The cancer control program is, therefore, directing its major efforts this year toward improving control of cancers through the continued grant support of State programs, project grants, and direct operating techniques.

Microscopic examination of cells cast off in body fluids offers the possibility of discovery of cancers of the uterine cervix at a stage when complete cure can be assured for most of them. And yet, it is estimated that this malignant lesion will attack 40,000 women this year, killing 14,000 of them. Intensive work by the program and others is beginning to show results in more general use by physicians of the Papanicolaou smear as a routine detection procedure.

Approximately 55 projects are operating under the project grant system to train students in cytodiagnosis and 40 other projects are being carried out in communities to demonstrate methods of cervical cancer control by cytology. Eighteen communities having medical and supporting technical services already available have been selected as showcase communities to demonstrate the essential steps of good cervical cancer control programs to other communities throughout the country.

Mammography, a soft-tissue X-ray technique, has proved to be a valuable aid to the diagnosis of breast cancer. We are supporting a study in 24 clinical institutions of the reproductibility of mammography diagnosis. The procedure is complex, involving special adaptation and precise operation of X-ray equipment, as well as special training for the diagnostic radiologist. This will receive our special attention in 1964.

Cancers of the colon and rectum annually cause the death of more than 40,000 persons in the United States, making them by far the most frequent form of fatal malignancy. Since the development of the sigmoidoscope, two-thirds of these colon-rectum cancers could be discovered in the symptomless, or highly curable, state. However, the sigmoidoscopic examination is not as easy to perform or as painless to the patient as the chest X-ray for tuberculosis, or even the Papanicolaou smear for cervical cancer. In hope of finding a way to lessen resistance to use of the sigmoidoscope on the part of both doctors and patients, a contract has been undertaken to develop a flexible sigmoidoscope which may greatly facilitate clinical examination of the colon, and thus pave the way for a radical improvement in early detection and control of cancer of the colon and rectum.

Lung cancer is a striking exception to the decline in total death rates over the past half century. Deaths from lung cancer in the United States have climbed from 4,000 in 1935 to 11,000 in 1945 and to 36,000 in 1960. The Surgeon General has appointed a special committee to evaluate scientific data on tobacco and health, including the relationship of smoking and lung cancer. The cancer control program is supporting a study to determine if pulmonary cytology will detect early changes in lung tissue which predispose the smoker to lung cancer. A survey of physicians' attitudes concerning advice to patients about smoking will be completed this year.

DIABETES AND ARTHRITIS CONTROL

Lacking the drama of sudden death or abrupt crippling, diabetes and arthritis have not received the attention they deserve, notwithstanding the fact that both are becoming increasingly critical as health problems with mounting economic loss to the Nation.

The development throughout the Nation, therefore, of community programs designed to assist patients with diabetes and arthritis to live out their lives with fewer complications and less pain and crippling is the objective of our program effort.

While there are at hand sound, reliable, and relatively simple measures which would prevent disabilities from arthritis, there are only about 300 special clinics for treatment of arthritics and fewer than 1,500 physicians who devote most of their time to the care of arthritic patients. These deficiencies as well as discouragement and lack of interest in the special problem of arthritics by the health profession, has spilled over to the public and the patient, resulting in disillusion, mounting recourse to self-care and an estimated expenditure of $250 million annually on quackery. In 1963, we intensified and broadened our program efforts to overcome some of these problems. We have been most fortunate to obtain the services of Dr. Margaret Edwards, formerly director of the arthritis program in New Jersey, to direct our expanded activities in arthritis control.

Program effort in 1964 will be directed at stimulating the development of community programs designed to better utilize existing facilities and personnel or establish additional facilities where they are nonexistent, and to assist in the establishment of continuing education and training programs at regional, State, and local levels. Planning and preliminary work has already begun on the development and testing of a practical screening procedure for gout, a most painful form of arthritis.

"The early detection of diabetes continues to be an important phase of the program. Encouraging progress has been experienced during the past year in this area. Voluntary reporting of blood screening by States in 1962 increased 37 percent over the previous year. Reports of 250,000 persons screened in 23 States, the District of Columbia, and Puerto Rico, have been received for the fiscal year ending June 30, 1962.

A major portion of program effort is exerted in developing, testing, and encouraging the implementation of all forms of public, patient, and professional education. A seriously limiting factor in this effort is the critical shortage of professional resources to do the teaching. One new approach which has been undertaken and which appears to hold forth a good deal of promise in meeting this manpower shortage is programed learning with a teaching machine. Preliminary testing carried out in patient education for diabetes indicates that this can be a very useful tool in a variety of settings. Work is going forward on the development of a similar tool for use in professional education in the public health, clinical, and control aspects of diabetes.

NEUROLOGICAL AND SENSORY DISEASE CONTROL

One out of every nine persons in the United States—an estimated 20 million Americans—are afflicted by neurological and sensory diseases. The disabilities range from vision and communicative defects to disorders that cause serious crippling and premature death such as epilepsy, cerebral palsy, multiple sclerosis, Parkinson's disease, and mental retardation.

Research has developed new medical means for the early detection, diagnosis, treatment, and rehabilitation that can arrest progress of many of these diseases and prevent or greatly reduce their disabling effects. Glaucoma, hearing and speech disorders, epilepsy, and mental retardation are conditions about which there is adequate knowledge that can be readily applied.

The neurological and sensory disease service program was established in January 1962 to hasten community action and to develop new control techniques.

A major program activity has been to assist the States in assessing the extent of their resources and needs for facilities and manpower to develop comprehensive statewide programs. Planning grants have already been awarded to California, Montana, New York, North Carolina, Ohio, Oregon, Washington, and Louisiana. Additional State planning grants will be supported during 1963 and 1964.

We are supporting the planning of comprehensive community neurological and sensory disease services in university medical schools and health centers. Besides being focal points for patient services, these institutions will serve as training facilities for physicians and allied professional personnel seeking to develop specialized skills necessary to care for the neurologically disabled.

Mental retardation is receiving increased interest and attention in communities throughout the Nation. We are promoting and supporting efforts to establish or expand local services for a wide variety of projects related to mental retardation. For example, the Kenny Rehabilitation Institute in Minneapolis is developing a program for the comprehensive diagnosis and management of schoolchildren with subtle neurological and sensory disorders; the St. Joseph County Health Department, Centerville, Mich., is developing a program for the physical, neurological, and psychological evaluation and treatment of the child with behavior and learning problems; and training programs for nurses, physicians, and allied health disciplines dealing with mental retardation and other neurological disabilities are being supported at universities in Indiana, Washington, California, and Maryland.

In 1964 we are planning to develop a Mental Retardation Community Service Demonstration Center. This Demonstration Center will provide diagnostic and treatment facilities for a large metropolitan area and will serve as a laboratory for demonstrating effective and coordinated referral, followup, counseling, and other services involving families, physicians, schools, and voluntary agencies.

Glaucoma has blinded over 40,000 persons and threatens over 1 million more individuals who do not suspect that they have the condition. Early detection and treatment of glaucoma can prevent blindness or serious vision loss in 85 to 90 percent of cases discovered. In cooperation with the National Institute of Neurological Diseases and Blindness and five participating university clinics, we are evaluating effective methods of diagnosing chronic glaucoma. Each of the clinics is screening varying population groups and using different screening techniques. This 5-year study will provide much valuable information for expanding and improving glaucoma screening. In addition, we are using present knowledge and screening techniques to support community programs demonstrating the early detection of glaucoma.

The scope of vision conservation activities has been broadened to include exploration and development of methods of controlling amblyopia-exanopsia. This disorder of one eye, which is very prevalent, develops in the very young. If it is not detected early and properly treated, the condition can lead to serious loss of vision and, in time, blindness in the affected eye. A new method of reversing the progress of this condition, pleoptics, has been developed in Europe. Support is being given to a pleoptic-orthoptic unit established at Baylor University to test this new method of treatment and to determine the practicability of developing similar service units throughout the United States.

Plans are being completed for a regional demonstration center offering training in the latest rehabilitation techniques for victims of cerebral palsy, multiple sclerosis, cerebrovascular diseases, and multiple handicaps, including the blind and deaf.

To expedite the achievement of our expressed purpose of mounting an effective and balanced program of care and preventive services for the chronically ill and aged, an increase of 29 positions and $4,943,630 is requested. This increase is divided between our two main funding mechanisms—$3,085,000 for grant programs and $1,858,630 for technical assistance programs.

Mr. FOGARTY. Go ahead.

Dr. GUTHRIE. I speak on the appropriation "Chronic diseases and health of the aged." In accordance with the request of this committee we are presenting this year a budget combining all of the control activities in heart disease, cancer, and neurological and sensory diseases with the budget and programs previously supported by the "Chronic diseases and health of the aged" appropriation. Also included in this request are research grant activities transferred from the National Institutes of Health.

This is a most significant development in the national effort to create an identifiable, orderly, and effective approach to the total problem of preventive and care services for the chronically ill and aged in this country. For now vested in this division is the responsibility for carrying on control activities for 7 out of the 10 leading causes of death. Our stated task in preventing disability is equally impressive for we also have the responsibility for control programs in 12 of the 25 most prevalent chronic conditions which cause disability limitation.

We are acutely aware of the magnitude of our job in mounting an effective national program for preventing disability and premature death from specific diseases, and for assisting communities to establish, improve, and extend out-of-hospital services for their chronically ill and disabled.

It is our conviction, however, that an effective program can and must be carried out, and that this single budget approach will materially assist and speed the solution to many of the current problems.

CARE SERVICES

Our program of project and formula grants-in-aid authorized under Public Law 395 is showing excellent progress in most every State and the purpose of this act, "to assist State and communities to initiate, extend, and improve out-of-hospital services especially for their chronically ill and aged," is being well served.

During the first year of operation in our project grant program, 44 projects were approved and are expected to produce results for broadscale application to community health situations.

In our formula grants-in-aid to States, progress has been equally good. For example, plans for 1963 from 34 States show a continuing emphasis on programs to improve the quality of care in nursing homes, 8 States are emphasizing homemaker services, 20 States plan to initiate or expand early disease detection programs, 23 States are initiating restorative services activities, and 14 States plan to employ nutritionists and dietitians for specific out-of-hospital services programs.

In brief, it can be said that though we are showing progress toward our goal, it will require some time before quality community health services are available when and where they are needed by growing numbers of the population who can be and prefer to be cared for in other than a hospital setting.

In order to sharpen the focus on two specific care services problem areas, we recently completed a realinement of certain long-term illness activities. We have established a gerontology program which will be concerned with the special health problems of the aged and have been fortunate in being able to employ a leading gerontologist to serve as chief of the program. We also have elevated to program status our nursing homes and related facilities unit and feel this increased stature and visibility will provide additional impetus to our program for raising the standards of patient care in nursing homes.

PREVENTIVE SERVICES

It has been said many times that the only long-range answer to the problems of chronic disease and disability is prevention. Our preventive programs of heart disease, cancer, diabetes, arthritis, neurological and sensory diseases have a common thread of stimulating community action to detect these diseases and conditions early and bring them to treatment.

HEART DISEASE CONTROL

Taken together the five major groups of diseases of the heart and circulatory system are the most serious health problem in the United States. Intensive application of research findings from laboratories and clinics, and expanded use of improved case finding and treatment techniques that have been demonstrated in field tests can do much to prevent or arrest some of these diseases and restore many thousands of patients to useful life.

Our stroke rehabilitation efforts, stroke prevention studies and demonstrations, program for establishing intensive care units for acute heart attacks, standardization of cholesterol determinations, automation of electrocardiograms, and screening for rheumatic heart defects are the principal areas of program interest and development in heart disease control.

CANCER CONTROL

If present knowledge for combating cancer were used to the utmost it is estimated that deaths from this cause in the United States could be reduced by 75,000 per year.

Our principal cancer program emphasis is directed toward detection and cure of cancers of the uterine cervix, through stimulating the development of cervical cancer control programs using the Papanicolaou smear as a detection procedure, toward the expeditious study and application of the mammography technique for the detection and diagnosis of breast cancer, and finally toward the development of improved procedures and equipment for facilitating control clinical examination of the colon.

DIABETES AND ARTHRITIS

Lacking the drama of sudden death or abrupt crippling, diabetes and arthritis have not received the attention they deserve, notwithstanding the fact that both are becoming increasingly critical as health problems with mounting economic loss to the Nation.

In diabetes we are continuing our efforts to improve and expand our early detection and professional education activities.

In arthritis, where the problems of lack of facilities, dearth of physicians devoting full time to the disease represent serious deficiencies, we are aiming to stimulate the development of community programs for improved utilization of existing facilities and personnel, for establishing facilities where there are none, and to assist in the establishment of continuing education and training programs. We are also continuing on the development and testing of a practical screening procedure for gout, a most painful form of arthritis.

NEUROLOGICAL DISEASE CONTROL

One out of every nine persons in the United States—an estimated 20 million Americans—are afflicted with neurological and sensory diseases. These disabilities range from vision and communicative defects to disorders that cause serious crippling and premature death such as epilepsy, cerebral palsy, multiple sclerosis, Parkinson's disease, and mental retardation.

The neurological and sensory disease control program was established in January 1962, to hasten community action on this broad problem and to develop new control techniques.

Our major areas of interest in this new program include assisting the States in assessing their needs for facilities and manpower, supporting comprehensive community service centers in selected university medical schools and health centers, and supporting special projects in mental retardation, epilepsy, glaucoma, and amblyopia exanopsia which we hope will lead the way to developing new or improved methods of patient care and service. Another important activity is the development and support of training programs for the much-needed manpower in the medical and allied health fields.

BUDGET FOR 1964

To expedite the achievement of our expressed purpose of mounting an effective and balanced program of care and preventive services for the chronically ill and aged, an increase of 29 positions and $4,943,630 is requested. This increase is divided between our two main operating mechanisms—$3,085,000 for grant programs and $1,858,630 for technical assistance programs.

Mr. Chairman, I would be happy to answer any questions that you may wish to ask.

Mr. Fogarty. The appropriation for 1963 for the activities to be financed under this appropriation in 1964 is $50,963,000 and the request for 1964 is $55,907,000, or, as you have said, an increase of $4,944,000 and 29 positions; and you are also obliged to absorb your pay act costs for 1963?

Dr. Guthrie. Yes, sir.

Mr. Fogarty. What does that amount to?

Dr. Guthrie. Approximately $150,000.

TRANSFER FROM NIH

Mr. Fogarty. Now, about $28 million of the amount for 1963 was appropriated to the National Institutes of Health and it shows as a comparative transfer to you. Do you think this is a better way of financing these activities?

Dr. Guthrie. Well, I think in terms of program administration and operation, this brings the whole package together—appropriation and the administration—within the Service, and I think it is very helpful now that we are in a position to fully and actively coordinate and present our program and be in constant touch with the operating and the budget portions of it.

I think this will be, indeed, a useful and prudent thing.

MENTAL HEALTH PROGRAM

Mr. Fogarty. If that is so, why do you show only $17,000 transferred out of mental health?

Dr. Guthrie. The control program for mental health is coordinated within the National Institute of Mental Health. We do not administer mental health activities and we are transferring only those control programs previously administered by our division.

Mr. Fogarty. I thought we had a lot of work in mental health with State agencies.

Dr. Guthrie. They do.

Mr. Kelly. They do, but it is done through the National Institute of Mental Health. The responsibility for working with the States has never been taken out of the National Institute of Mental Health whereas, in the past, the control program in heart and cancer was actually operated by the Bureau of State Service, although you appropriated the money to the National Institutes of Health. We have now brought the funds together with the program. The responsibility in mental health still resides in the National Institute of Mental Health.

Mr. Fogarty. Why?

Dr. Terry. I think largely, Mr. Chairman, because this program has developed there, and we just have not arrived at the stage where we felt that it could be moved out without doing damage to the program.

Dr. Christensen. We have a liaison person, Dr. Mabel Ross, who formerly was assigned to the National Institute of Mental Health, and she works very closely with the National Institute of Mental Health and with our Bureau so that we get the mental health aspects into all of the programs that we have within the community health side of the Bureau.

Mr. Fogarty. I'm not necessarily against this way of handling it, but that's not a very good answer to the question of why mental health is handled differently.

Mr. Kelly. I think, Mr. Chairman, we may have a better answer for you when we appear next year, because the Surgeon General does have under consideration the whole question, in the light of the President's desire to expand the whole program of mental health and mental retardation, as to how these expanded programs should best be fitted into the Public Health Service, and whether or not all aspects of mental health should be in one bureau, or organized as a bureau, or whether or not there should be a division between the programs of working with the States, and so forth; and those that are related to research. It is now under study but I don't think there has been a resolution of the issue as yet.

Dr. Terry. That is correct, Mr. Chairman.

Mr. Fogarty. Is mental health more of a problem than heart disease?

Dr. Terry. Well, if you take the number of persons who are in our hospitals today, yes. Half of your persons who are hospitalized in this country today are mental health patients. In many other respects, in terms of the number of deaths, no, sir. It is not as big a problem, Mr. Chairman.

I think, Mr. Chairman, to be quite frank with you, that as a part of the congressional support which has developed over the years, certain program activities have grown up in the National Institute of Mental Health, which we do not carry in other institutes.

For instance, many of the training activities for example—take, for instance, the program for training general practitioners for a year, in psychiatry, for them to return merely to do service—are still located in our National Institute of Mental Health. Many of the training and related activities which are still in the Mental Health Institute are quite different from the programs in our other Institutes, and one of the things that Mr. Kelly was referring to is that we have under active consideration at the present time, what is the best organizational alinement for really getting ahead?

I think it is quite clear in these programs, that we move down to our Bureau of State Services the control programs, move them out of

Institutes. This could be done very well without any interruption or any crippling of the programs.

On the other hand, frankly, I have not arrived at that stage with regard to the National Institute of Mental Health, and the mental health control programs, but we do have it under active study, and I am certain that by next year we will have a much clearer answer to you because today I do not know the answer.

Mr. Fogarty. All right.

AUTHORIZATION FOR TRANSFERRED ACTIVITIES

This new appropriation language broadens the paragraph to cover these transferred activities.

Is it all authorized in the basic law?

Mr. Hambleton. No. The cancer and neurology programs are not authorized in the basic law. The heart program is.

Mr. Fogarty. Why is heart authorized and cancer not?

Dr. Christensen. I think the cancer program is in point-of-order language, as I remember it, and the same holds true for neurology and blindness. The heart grant program comes under section 314(e) of the Public Health Act.

Mr. Fogarty. Would you put the pertinent citation in the record?

Dr. Christensen. Yes.

(The citation follows:)

The heart disease control program is authorized under the National Heart Act (title IV, pt. B. of the Public Health Service Act).

Mr. Kelly. I should add there, Mr. Chairman, we are not asking for new authority here. We are just taking authority that was heretofore contained in the National Institutes of Health, and we are incorporating this and all other points of order into the proposed legislation. We actually got it submitted in the closing days of the last session.

Breakdown of Increase Requested

Mr. Fogarty. Now, the increase is pretty much across-the-board. There are 1-sentence summaries of each of 11 program increases on pages 65 and 66. Give us an explanation of each of these.

Dr. Guthrie. Yes, sir.

RESEARCH GRANTS

An increase of $305,000 is for research grants which will enable us to continue eight additional grants in 1964. It will also finance additional indirect costs in 1964. The cancer control formula grant increase of $500,000 is to advance the level of the State control programs.

CERVICAL CANCER DETECTION

In the cancer project grants, an increase of $250,000 is requested to expand our 14-step cervical cancer detection projects.

Mr. Fogarty. How many of these projects are in operation now?

Dr. Guthrie. Our present cancer project grant program supports about 20 projects of the 14-step type.

Mr. Fogarty. Are they still 3-year projects?

Dr. Guthrie. This varies somewhat. They are generally 3-year projects.

Mr. Fogarty. How many are in operation now?

Dr. Guthrie. Approximately 20 of the 14-step projects are in operation.

Mr. Fogarty. How many were in operation last year?

Dr. Guthrie. I am not sure I have that information. I don't have that information with me.

Mr. Fogarty. Was it more or less?

You will supply a number for the record.

Dr. Guthrie. All right.

(The information follows:)

There were 17 of the 14-step cervical cancer detection projects funded in 1962.

Mr. Fogarty. Now, what do you anticipate? How many will be in operation in 1964?

Dr. Guthrie. Twenty six. We have an increase of six projects using the 14-step program.

Mr. Fogarty. Do you think we are spreading this around enough?

Dr. Guthrie. Well, these projects do cover a good bit of the country. These are project grants and our purpose here is to try to get as good a quality project as possible.

Mr. Fogarty. I am for it. I have been for increasing the number of these projects and giving all of the people the benefit of this detection method. I think we ought to be doing more than we are doing.

Dr. Guthrie. We feel that we have made considerable progress to date and with the expansion of this amount it isn't——

Mr. Fogarty. Has there been a project in every State since Memphis, Tenn.?

Dr. Guthrie. There have been cervical cancer control activities in every State. I am not certain whether every State has a project but we have covered a good deal of the country since that program was underway.

Mr. Fogarty. Does anybody else know whether it covers every State or not?

Dr. Christensen. No, sir.

Dr. Guthrie. These are usually affiliated with a medical institution, so on that basis the location of the project would probably be where the major medical institutions' populations are. It takes a considerable amount of specialized skill to operate these projects properly.

Mr. Fogarty. I understand that. I went all through the one in Memphis, New Orleans and Rhode Island; and I understand they have all been very successful, and people are living today who would not be alive if this method had not been pushed by the Public Health Service. If it was good in one area, I think it ought to be spread to others, regardless of the cost. It was not too difficult in my State to get the proper personnel together.

Dr. Guthrie. We would agree wholeheartedly with that.

Mr. Fogarty. It was centered in the biggest hospital in the State.

Dr. Guthrie. The intent of the program has been to place these projects where there is local ability, organization, and facilities available.

Mr. Fogarty. And in our State it had the complete cooperation of the Medical Society, the Cancer Society, and the health services in the State. I don't know how much it cost. If it cost $10 million, I think it would have been worth every dime we spent on it, because they found many women with early stages of cancer that they were able to cure. There is no doubt that many lives were saved. So if there are areas in the country that have not been exposed to this, I think we ought to find out where they are and maybe we ought to do something about it.

Can you supply something for the record showing where these demonstration projects have been carried out, and where you think demonstration projects might be placed in the next year, if you had the necessary funds?

Dr. Guthrie. I would be glad to do so.

(The information follows:)

Locations of 14-Step Projects for Control of Uterine Cancer

The objectives of these projects are: to make application of the Papanicolaou test for uterine cancer a part of the regular care program of selected groups of women; and to develop and demonstrate the kinds of quality controls that are necessary to insure adequate coverage of known populations. In their initial screenings these projects are expected to find five cancers per 1,000 women. As the screenings are repeated, the rates of detection should decline rapidly.

None of these projects has been operating at full capacity for a complete year as yet; each is planned for a minimum of 3 years. The geographic distribution of the projects is designed to place effective demonstrations within reach of every practicing physician.

LOCATIONS OF PROJECTS

Initial grants awarded from 1962 appropriation:

Birmingham, Ala.
Phoenix, Ariz.
Hartford, Conn.
Chicago, Ill.
Brookline, Mass.
Detroit, Mich.
New York City, N.Y.
Chapel Hill, N.C.
New Orleans, La.
Puerto Rico
San Antonio, Tex.
Salt Lake City, Utah
Richmond, Va.
Seattle, Wash.
Parkersburg, W. Va.
Milwaukee, Wis.
Pittsburgh, Pa.

Initial grants awarded from 1963 appropriation:

Chicago, Ill.
St. Louis, Mo.
Augusta, Ga.

Initial grants planned for 1964 appropriation:

Augusta, Maine.
Dallas, Tex.
Albuquerque, N. Mex.
Des Moines, Iowa.
Little Rock, Ark.
Louisville, Ky.

Additional projects needed as funds become available:

Newark, N.J.
Boise, Idaho.
Indianapolis, Ind.
Jackson, Miss.
Hanover, N.H.
Omaha, Nebr.
San Francisco, Calif.
Memphis, Tenn.
Miami, Fla.
Cleveland, Ohio.
Kansas City, Mo.
Denver, Colo.
Billings, Mont.
Spokane, Wash.

IMPROVEMENTS IN PROGRAM

Mr. Fogarty. Are they getting the same results as they have in the earlier days, or are the results better?

Dr. Guthrie. We have improved, I think, our ability to control the quality of these projects. I mean by this, the element of quality control in cervical cancer detection. As you know, in the early days of this program, we did turn up a lot of suspected cervical cancer. However, detecting the cancer, getting the woman under treatment, and effecting a cure, required a number of intermediate steps. Presently we refer to these projects as the 14-step program, because the attention to the detail of each step of the process is very important in being able to bring these women, once detected, under treatment. We have learned a great deal more about cervical cancer detection through these projects and are applying this new information to each new project as it comes along.

Mr. FOGARTY. As I remember, when these slides were taken to the hospital, and something showed up, that person's doctor was notified. Then it was between the doctor and the patient. Will you put in the record these 14 steps that you take today?

Dr. GUTHRIE. Yes.

(The information follows:)

FOURTEEN STEPS IN CONTROL OF UTERINE CANCER

The Papanicolaou cytological test for cancer of the uterine cervix was proven effective almost a generation ago. Acquaintance with the test has spread throughout the Nation and the number of tests made is growing by leaps and bounds every year. Still, the death rate for cancer of the cervix remains distressingly high, and it is becoming clear that much more than application of the test alone is needed, to realize its full potential for lifesaving. Through observation of many projects, and analysis of the entire lifesaving process, 14 essential steps have been identified and built into a control protocol for special high risk groups.

There are many ways in which these steps may be taken but each control project must have two characteristics. Each must (*a*) systematically accomplish all 14 steps, and (*b*) maintain control of the quality of its achievement, in each step. The following paragraphs briefly list the 14 steps.

1. *Planning the control project.*—The key is selection and identification of a target population to whose protection the project will be directed.

2. *Enlisting the women.*—Thorough and systematic efforts to explain the project to women of the target population are essential to high acceptance of the test among the group.

3. *Orientation of professional participants.*—Physicians and other professional participants must accept the objectives, the medical and scientific principles, and the administration of the project before the program is put into operation.

4. *Taking the Papanicolaou smear.*—The plan must help the examining physicians to assure that a readable smear is taken from every woman, and provide a review of the quality of the smears for this purpose.

5. *Cytologic examination.*—The cytologic examination must not miss cancer cells, if present, and the procedure must provide for continuing control of the quality of smear examination.

6. *Clinical diagnosis.*—The project plan must assure that the clinician completes all diagnostic procedures leading to diagnosis of cancer, if suggested by the cytology examination.

7. *Teaching the patients.*—Education of the women is necessary to assure that none drop out because they have unanswered fears.

8. *Control of data.*—The project records must be positive and highly accurate, so that every patient can be found and visited even though she may change her residence during the project.

9. *Followup of positive patients.*—The project plan must provide for effective followup of patients with positive findings; including visits to their homes as necessary.

10. *Taking biopsy.*—As with the above clinical procedure the project plan must also control the quality of the taking of the biopsy.

11. *Tissue diagnosis.*—Examination of the tissue taken for biopsy must be subjected to continuing quality checks.

12. *Treatment.*—The project plan must provide for close supervision of patients, to assure that treatment indicated is actually given.

13. *Evaluation.*—The project must provide long-term followup of treated patients to assure continuing analysis of recurrence and survival rates.

14. *Supervision of negatives.*—A basic objective of the program is to make periodic cytologic examination and indicated followup a part of the regular medical care program of each woman in the target population. The project must provide means of doing this, and long-term plans for assuring that it is done.

Mr. FOGARTY. Another problem is, after these demonstrations have taken place, to get these women to go and get periodical examinations, isn't it?

Dr. GUTHRIE. Yes, it is; and part of this has to do with public education activities of how to prevent cancer, plus providing better information to the practicing physician so that he is constantly alert to detecting cancer in his patients, and the families are alert to the benefits of preventive screening.

Mr. FOGARTY. How effective was the program carried on by the General Federation of Women's Clubs?

They adopted this as a project for the country, to alert the women to go to their doctor and get a checkup. Do you know how successful that was?

Dr. GUTHRIE. They have a regular program of emphasizing important things that they think their membership should pay attention to.

We think that as a method of public education to health needs this is a very good way of disseminating information. They have reached a significant number of women.

Mr. FOGARTY. All right. What is the next one?

NEUROLOGICAL AND SENSORY PROJECT GRANTS

Dr. GUTHRIE. The next increase is for neurological and sensory project grants, and the request is for $1,030,000 for additional projects to support demonstrations pertaining to mental retardation and initiate and expand community service demonstrations that were started this year.

Mr. FOGARTY. What sort of additional demonstration projects do you have in mind?

DETECTING MENTAL RETARDATION IN CHILDREN

Dr. GUTHRIE. As an example, there are tremendous problems created when school age children and young adults of less than obvious mental retardation are placed in a normal school or employment situation.

Because of insidious mental damage that has been undetected for some period of time, these youngsters have either an emotional reaction or lack of good performance in the school or in the job. We plan to establish through these demonstration projects a demonstration center, where a careful and complete diagnostic workup can be obtained, and a definitive diagnosis given to these problems, and actual treatment regimens instituted.

Mr. Fogarty. Are these schoolchildren or preschool?

Dr. Guthrie. Both school and preschool.

Mr. Fogarty. I would think the most important would be preschool.

Dr. Guthrie. Where we can reach preschool, in this area, we do.

Mr. Fogarty. Many wrong diagnoses have been made by doctors, haven't they, in the past?

Dr. Guthrie. Well it is not so much a wrong diagnosis as much as a lack of any diagnosis. Very often, these youngsters exhibit a bizarre behavior and are labeled as a delinquent; they are labeled as an intellectually deficient child, when actually their problem may be one of a hearing defect or a minor problem in brain damage that occurred at birth. They are unable to successfully cope with their environment in the normal manner, but they have been mislabeled by other than health professionals. It is important to bring these people who never had an opportunity to get a very careful diagnostic workup to a facility where they can have a complete neurological examination. When it is indicated, they might be given an electroencephalogram or other type of diagnostic test. Such a specialized examination may help to establish a diagnosis of epilepsy in a child who has never actually had an overt episode in front of his family. We now have new, improved diagnostic and treatment methods which can be made available to these patients.

The projects making available these specialized diagnostic services to a school health program and to a community health program, offer great promise.

COOPERATION WITH OTHER AGENCIES

Mr. Fogarty. How familiar are you with the Department of Education program under a cooperative research grant where they can now determine that a child is retarded at the age of 2 years.

Dr. Guthrie. I am not personally familiar with that project but I am familiar with similar activities. This is one reason we asked for this type of program. We know now that there are diagnostic methods and facilities that can be made available to diagnose these problems, whereas a few years ago this was impossible.

I think now we are in a position to locate these resources, and bring them together to demonstrate a program, and make this known to other communities.

We are starting some pilot developments along these lines this year.

Mr. Fogarty. Well, this pilot project has already been concluded in this university in California. They considered this a real significant advance in the diagnosis of the retarded child. Another project showed that school age retarded children get along better in the special classes rather than being mixed in with the regular classes. So many of these projects would be preschool projects? Preschool diagnostic?

Dr. Guthrie. Preschool or school, or actually, they would be available to the total population in the community, as determined by the group sponsoring or initiating the request for the project.

Mr. Fogarty. What is the Children's Bureau doing in this?

Dr. Guthrie. The Children's Bureau activities are considerable in this area. They have, I believe, highlighted their activities around the perinatal period. Their preventive activities are concerned with the care of the mother during pregnancy and the delivery of the infant in the hospital.

Mr. Fogarty. I thought the Neurological Institute was primarily interested in the perinatal period.

Dr. Guthrie. In the research activities, principally, yes.

Mr. Kelly. I recall one of the Children's Bureau projects related to a disease which occurs because children are unable to metabolize milk. They have gone around the country, working with health departments, and welfare departments, to identify the families of children that suffered from that, in order to prevent its recurrence.

Mr. Fogarty. I think they have also funded preschool diagnostic centers.

Mr. Kelly. Yes, sir.

Mr. Fogarty. But do you have a liaison with Education?

Dr. Guthrie. Yes; we do.

Mr. Fogarty. And the Neurological Institute?

Dr. Guthrie. Very much so.

Mr. Fogarty. And the Children's Bureau?

Dr. Guthrie. Yes.

Mr. Fogarty. And vocational rehabilitation?

Dr. Guthrie. Very much so. Both formally and informally.

Mr. Fogarty. All right. Go ahead. What is the next one?

CHRONICALLY ILL AND AGED

Dr. Guthrie. The next increase is the chronically ill and aged project grants. An increase of $1 million is requested to support approximately 30 additional projects in this area, for our out-of-hospital community services.

Mr. Fogarty. And by that, do you mean taking care of these old people at home rather than in the hospital?

Dr. Guthrie. Yes, sir.

Mr. Fogarty. This would tend to get the older people out of the hospital quicker, if they had these trained personnel that could step in and take care of these people?

Dr. Guthrie. Yes.

Mr. Fogarty. Something like a homemaker?

Dr. Guthrie. Homemaker. Home nursing.

Mr. Fogarty. What is the next one?

DIAGNOSIS OF BREAST CANCER

Dr. GUTHRIE. The next is in the direct operations of the cancer control programs, an increase of $156,000.

This is primarily for emphasis on the new diagnostic technique of breast cancer, X-ray mammography.

Mr. FOGARTY. What does this mean?

Dr. GUTHRIE. This is actually an old technique but it is receiving new interest and attention because of its application as a detection technique for breast cancer.

This involves taking breast X-rays with careful technical considerations and analyzing these X-rays to determine whether or not the shadows depict a lesion suspicious of cancer.

Mr. FOGARTY. Do you generally wait until something shows up before you take the X-rays?

Dr. GUTHRIE. The technique is normally done after the woman, or her physician, has been alerted by some suspicious lump. Heretofore, the only technique available was either to do biopsy surgery or to watch and wait, and, of course, the latter is fraught with danger.

Mr. FOGARTY. You don't practice that, do you? Watch and wait?

Dr. GUTHRIE. We certainly don't. We hope no one else does. Unfortunately, some women do do this. They are reluctant to go in if they suspect surgery will be done. This mammography technique is a painless X-ray procedure and it looks very promising.

Mr. FOGARTY. Is it not true, in most cases of breast cancer, that when the symptoms first show up, if the person goes to a doctor, that most of these cases are curable?

Dr. GUTHRIE. If they discover it early, the results are very favorable. I think, particularly now, with the emphasis that is being given to breast cancer detection, and the alertness on the part of women to report to their physicians if they have a suspicious lump, that the potential for early detection and prevention of disastrous results can be increased immeasurably.

Mr. FOGARTY. I suppose it all depends on the person; how long it takes for this to spread to the lymph glands and other places, doesn't it?

Dr. GUTHRIE. Yes. It doesn't act the same in all women.

Mr. FOGARTY. What is the next one?

DIABETES AND ARTHRITIS CONTROL

Dr. GUTHRIE. The next program is diabetes and arthritis control where an increase of $209,000 on seven positions is requested to place particular emphasis in two areas of the arthritis program.

(1) In studies of existing community facilities to give service to arthritics and

(2) An education and training program for physicians and other health personnel serving arthritics.

Mr. FOGARTY. What about oral therapy for diabetes?

Dr. GUTHRIE. The new oral hypoglycemics.

Mr. FOGARTY. Oral what?

Dr. GUTHRIE. Oral hypoglycemics.

Mr. FOGARTY. How is it working out? Is it perfected and are more people using it?

Dr. GUTHRIE. This is certainly an important advance in the therapy of diabetes. It has to be determined on the basis of the particular patient and on the type of diabetes as to whether he should have oral therapy exclusively or whether he should have other types of therapy combined with diet control.

I think the advances in the use of this drug represent a distinct advantage in the overall control of the diabetic patient.

Mr. FOGARTY. You mentioned in your prepared statement that you want to do more work in the problem of gout.

Dr. GUTHRIE. Yes, sir.

Mr. FOGARTY. Don't we have a drug that is pretty effective in that area?

Dr. GUTHRIE. Yes. Colchicine and probenecid are probably the best.

Mr. FOGARTY. Is that the one that came out 2 or 3 years ago?

Dr. GUTHRIE. Colchicine is a fairly old drug, probenecid is fairly new.

Mr. FOGARTY. It is a very painful thing, isn't it?

Dr. GUTHRIE. Yes it is, and we feel very confident that in our preliminary research, we will be able to perfect a detection test using a blood sample that's easy to perform, in much the same way we detect diabetes now.

Mr. FOGARTY. Do you put people on a diet with this new drug?

Dr. GUTHRIE. Both diet and with drug. If you make a definitive diagnosis and get them under treatment early you can take care of their problem very quickly and particularly prevent any crippling effects that would occur later on if treatment were neglected or postponed.

Mr. FOGARTY. All right.

What is the next one?

HEART DISEASE CONTROL

Dr. GUTHRIE. Heart disease control; an increase of $570,730 and nine positions and this increase would be used primarily in three major areas.

We have, as you know, developed a technique of recording heart sounds, particularly among children, and then, at a later date, having cardiologists listen to these sounds and detect those sounds which are abnormal. This has been developed as a pilot demonstration and we now have worked out a demonstration program, through which we would like to establish this type project in several other areas, bringing in school-age children for participation in this program.

It would bring out the fact that they may have congenital heart disease or other types of heart defects. We intend to use part of the increase for this purpose.

We also have a computer demonstration in heart disease which looks very worthwhile. This demonstration is concerned with the automation of electrocardiogram recording and interpretation. At the most recent meeting of the American Heart Association, we showed that an electrocardiogram taken in the city of Cleveland and transmitted by electronic devices to our instrumentation laboratory here in Washington could be computer interpreted and the results transmitted back to Cleveland within a space of a few minutes.

This, obviously, was a pilot demonstration but I think the possibilities in the future to be able to bring very specialized diagnostic ability into the hands of practicing physicians offers a real hopeful opportunity for better and earlier diagnosis of some of the severe forms of heart disease.

We would like to use part of the increase to further develop these automation techniques.

We also plan to develop additional stroke prevention and stroke rehabilitation programs.

STROKE PREVENTION

Mr. **Fogarty.** What do you have in mind in stroke prevention?

Dr. **Guthrie.** In stroke prevention we feel that there are a number of signs and symptoms of stroke that an individual may exhibit early, before he has a frank, overt, or disastrous stroke.

Mr. **Fogarty.** What are some of them?

Dr. **Guthrie.** Such things as transient dizzy spells, blurring of vision, localized headaches, perhaps even a partial or complete fainting spell. There are some 30 or 40 possible symptoms of a prestroke.

Mr. **Fogarty.** All right. Then what do you do?

Dr. **Guthrie.** What we want to do in these demonstration programs is to try to better identify these preliminary stroke symptoms and then, for that person who exhibits these symptoms, perform a complete diagnostic workup which would label those individuals with potential strokes and enable them to be brought under proper treatment. Some of these strokes can be prevented by early treatment, particularly if they have an arterial lesion located in the neck and the vessel has been almost occluded.

The person may have signs and symptoms of decreased oxygen to the brain. He may have a fainting spell and if he is alerted to this the doctor can then place this person in a special diagnostic facility where they can take pictures of this vessel and find out the lesion is there; operate on it; remove it; and the stroke can be prevented in that way.

TRAINED PERSONNEL IN FIELD OF STROKES

Mr. **Fogarty.** I have been told by some rehabilitation people that they have a terrific shortage of personnel in the field of strokes.

An example was given to me the other day that, in the medical schools, the medical student often has more hours in typhoid fever than on strokes. They may never see a typhoid fever patient. So they really don't get that training until they get out of school. You don't have anything to do with that, of course.

Dr. **Guthrie.** We certainly are concerned with the shortage of manpower when we try to stimulate the development of these services. We think there are many specialized services that ought to be made available to people and we too are finding out that there are serious manpower shortages which will impede the provision of these services.

There is no question about it. This is a serious problem, and my division is concerned with it because we cannot very well effect improvements if we have techniques and no manpower to carry them out. So I am concerned with it very much.

Mr. FOGARTY. Well, there is a great lack of manpower in this area.

Dr. GUTHRIE. There certainly is.

Mr. FOGARTY. All right. Go ahead. What is your next one?

OTHER INCREASES

Dr. GUTHRIE. Our next item is the neurological and sensory disease control program. We are requesting $138,000 and four positions primarily for developing additional detection techniques for mental retardation and developing an improved educational program.

This has to do with some of our developmental research, such as the example Mr. Kelly gave about some of the metabolic disease causes of mental retardation. New laboratory techniques have been advanced. Now we would like to develop these for practical community use.

Mr. FOGARTY. Let's put the other two in the record.

(The information follows:)

HEALTH SERVICES FOR LONG TERM ILLNESS

An increase of $212,000 and nine positions is requested for the health services for the long-term illness program to support activities relating to health maintenance, multiple screening, and functional management of the chronically ill, and for the review and approval of research grants.

BUREAU OF STATE SERVICES MANAGEMENT FUND

An increase of $285,000 is requested for the pro-rata share of the Bureau of State Services management fund primarily for personnel management, contract services, and grants management activities.

RESEARCH CONTRACTS

Mr. FOGARTY. Now, I notice that the amount budgeted for contracts is going up 50 percent whereas the amount for grants is only going up 8 percent. Why this big difference?

Dr. GUTHRIE. Are you speaking of research grants?

Mr. FOGARTY. Yes.

Dr. GUTHRIE. Our research grant program will be new this year. This is a transfer of a program we have not administered formerly so we have no operating experience in this area on which to base a sound projection.

On the other hand, since our direct research contract area has been part and parcel of our continuing operation for sometime, we are in a much better position to project our needs realistically.

INCREASE IN PAYMENTS TO MANAGEMENT FUND

Mr. FOGARTY. I also notice the amount for payment to the Bureau of State Services management fund is just about double in 1964 what it is in 1963. Why should this be going up that much when the rest of your appropriation is only going up 10 percent?

Mr. HAMBLETON. Mr. Chairman, this year, for the first time, we are putting into the management fund 66 grants management people that formerly were financed from the community health practice program. We are also putting into the management fund a personnel office.

As you know, the management fund is financed by a pro rata charge or share by each division. These two items, which total $575,000, were in the community health practice program and in "Salaries and expenses, Office of the Surgeon General" appropriation and are deleted from those two programs in 1964. The charge is distributed over all of the divisions. That makes up the major increase in the management fund.

We are also asking in the management fund to set up a contract office. We presently do not have such an office. We are asking for 14 positions there.

GRANTS TO STATES

Mr. FOGARTY. What is the total of grants to States from this appropriation?

Mr. HAMBLETON. 1964—$41,887,000 is the total grants of which $24 million is for formula grants to States.

FORMULAS FOR ALLOCATING FUNDS

Mr. FOGARTY. What is the formula basis for making these grants?

Dr. GUTHRIE. This varies. The cancer control formula: 60 percent of the funds are allotted on the basis of population, weighted by financial need, and 40 percent on the basis of extent of the cancer problem.

Each State receives a minimum of $25,000.

The heart disease formula: 37 percent of the funds are allotted on the basis of 35 cents per capita for the first 100,000 population, thus providing a $35,000 basic grant and the remaining 63 percent is allotted on the basis of population weighted by financial need.

The chronically ill and aged formula: 40 percent of the grant funds are allotted on population data weighted by financial need and 60 percent on the basis of population 65 years of age and over. In 1962 each State received a minimum grant of $40,000 and in 1963 the minimum is $60,000.

Mr. FOGARTY. Why are there all these variations in these programs?

Dr. GUTHRIE. In the formulas?

Mr. FOGARTY. Yes.

Dr. GUTHRIE. In cancer, for instance, we try to place the formula in some relationship to the problem of cancer.

In heart, the same way. We try to get use of the funds weighted toward the heart problem in the State.

For the chronically ill and aged we weight the formula on the basis of the number of older people in the State.

Mr. FOGARTY. Don't you think you could devise a better formula for all of these?

Dr. GUTHRIE. We presently have—and Dr. Christensen may want to comment on this—a study underway of formula grants, en toto. It is being conducted by the Bureau, and I would assume that our basis of allocation of these funds would be under study. At the present time, if my information is correct, I don't think we are finding a problem with this program on the basis of the way in which it is allocated by formula.

Dr. CHRISTENSEN. Mr. Chairman, the formulas which we have are based upon three factors: the extent of the problem, population, and the per capita wealth in the State.

Mr. FOGARTY. Some Members of Congress are getting tired of the weight given per capita wealth in so many of these programs.

Dr. CHRISTENSEN. This is one of the requirements, as I remember it.

Mr. FOGARTY. Yes, I know. It is getting to be a controversial requirement. That is not your fault. It is in the law.

Dr. CHRISTENSEN. The extent of the problem of course, as Dr. Guthrie stated, varies with each of the categorical grants. As he mentioned, adding the number of people over 65 tends to define where the problem is the greatest in the chronically ill and the aged population, and it is for this reason that there is this variation.

Mr. FOGARTY. How does this variation work, say for Florida? Florida would be high?

Dr. CHRISTENSEN. Yes, Florida still would probably have a greater number over 65 than another State with a similar total population.

Dr. Terry authorized a study of the entire formula grant area as of July of this year, and this has been underway since that time, and we expect to have a preliminary report out by July of this year. The committee that is developing the recommendations consists of program people from the various divisions that have formula grants; State health department fiscal officers; and the State health officers in a few of the States. We are reviewing the whole grant procedure in terms of trying to arrive at the best method of distributing the grants.

PROPER STATE UTILIZATION OF FUNDS

Mr. FOGARTY. At one time we did not have much of a check on these appropriations. How do you propose to see to it that the States use these funds for the purposes that you have given the States the money?

Dr. CHRISTENSEN. This is one of the purposes. The State health officers themselves, regarding the appropriation in cancer, specifically suggested that a study should be made on the utilization of the formula grants. In view of the fact that we were going to look at all of the formula grants, we thought it would be better that it be incorporated in the total study, and that is what is being done.

We have not arrived at all the recommendations.

Mr. FOGARTY. Some State health officers don't want any control on their use of these funds. They say you should make one big grant and let them use it the way they think best.

Dr. CHRISTENSEN. Yes, sir; this is true.

Mr. FOGARTY. This committee never looked very favorably upon any such suggestion, I might say.

Dr. CHRISTENSEN. This is true with many of them, yes.

Dr. GUTHRIE. I might add that we do require the States to submit a plan to us of how they intend to use these funds.

Mr. FOGARTY. But we still do not have a very good system of checking on how they use these funds, have we?

Dr. GUTHRIE. Our heart program has just spent a year and a half on intensive work with the States on their control grant, and I think this program feels very confident that this year we are getting a very good return for this investment in the basic State programs.

Our cancer program is going to do the same thing this year. This means that our regional staff, together with our central office people, are visiting many of the States to work with their cancer control people to be sure we are getting maximum utilization of those funds.

Dr. CHRISTENSEN. I think there has been a considerable improvement in the utilization of the categorical grants over the last 10-year period.

COOPERATION WITH HEART ASSOCIATION

Mr. FOGARTY. Page 79, you say—

> Significant in 1963 is the cooperation being evidenced between health departments and chapters of the American Heart Association.

Is that what you just spoke about?

Dr. GUTHRIE. That is part of it.

Of course, we have a very strong working relationship with the American Heart Association. They do have chapters in every State and many of the larger metropolitan areas and they are interested in community services along with their research effort. They work very closely with us, and we do have many cooperative projects in these areas with the Heart Association.

NURSING HOMES

Mr. FOGARTY. What are you doing about improving nursing homes?

Dr. GUTHRIE. As I mentioned in my opening statement, we have elevated our nursing home program to full branch status. Within this program, major emphasis is being placed on upgrading the standards of services rendered in nursing homes.

You remember last year, we produced a standards guide that is being used by State licensing agencies in carrying out their licensing programs.

Mr. FOGARTY. How many States are already doing a good job in this area?

Is there a State that is doing a really good job?

Dr. GUTHRIE. Yes, every State now has a licensing program.

Mr. FOGARTY. There are still some awful firetraps being used as nursing homes in many of the States.

Dr. GUTHRIE. That is true.

In the last year, we have made substantial progress in our formula grants under Public Law 395. One of the major uses of these formula grants has been to improve services in nursing homes. Some 34 States have reported plans and specific action for improving their nursing home program in the State. Our own program is working through a variety of mechanisms with the American Nursing Home Association and others, in providing teaching guides and material and developing training courses. We are working with the University of Oklahoma and the State University of Michigan, in developing courses in nursing home administration. This development, if it takes hold in these two universities, will undoubtedly spread to others. We can offer training to people who are going to run these homes.

In the States, we are putting on training programs on how to handle their drugs, and how to train their less skilled nursing personnel, and better ways in which to give care.

I think there is substantial progress being made. I attended the mid-America nursing home convention this year. They had an overwhelming attendance there of nursing home operators from the Midwest and east coast, and there was great enthusiasm for the new program to upgrade nursing home services. I think the nursing home industry itself is aware of the large number of nursing homes that are substandard, and is trying to pull itself up by its bootstraps to improve this situation. I think our improved program emphasis will aid in this effort.

CONFERENCE ON STROKES

Mr. **Fogarty**. Did you have anything to do with this recent conference on strokes?

Dr. **Guthrie**. Yes.

Mr. **Fogarty**. Did you run it?

Dr. **Guthrie**. We are one of the cosponsors of this.

As you know, there is going to be a very significant stroke congress within the next year. It may be this fall, but I suspect it will go along into next spring.

Mr. **Fogarty**. Where?

Dr. **Guthrie**. I am not certain.

Mr. **Fogarty**. Just in this country?

Dr. **Guthrie**. This will be in this country—the National Stroke Congress will bring together people interested and involved in the problem. They will consider the various aspects of the stroke problem; research in stroke; improved care of the stroke patient; treatment of stroke; prevention of stroke; public education; and professional education in stroke. We are one of the cosponsors of this. It is also being supported by the American Medical Association, the American Heart Association, the Vocational Rehabilitation Administration, and the Public Health Service.

Mr. **Fogarty**. I believe the American Medical Association will agree that there is a shortage of personnel in this area.

Dr. **Guthrie**. I believe they do; yes, sir.

Mr. **Fogarty**. Did that not come out in this conference?

Dr. **Guthrie**. Yes.

Mr. **Fogarty**. This person that I talked to apparently was at the conference. He told me they had to admit there is a shortage here. Something ought to be done at the medical school level.

Dr. **Guthrie**. I think it is not only at the medical school level, but the paramedical and support personnel in the rehabilitation and restorative services field are also in short supply. This whole area——

Mr. **Fogarty**. When you say, "this whole area," are you talking about therapists of all kinds?

Dr. **Guthrie**. Yes.

Mr. **Fogarty**. Well, we are not going half fast enough in training these people, are we?

Dr. **Guthrie**. We are making some progress, but not much. I think a lot more can be made.

Mr. FOGARTY. We complained about this a year ago; 2 years ago; 3 years ago; but in training therapists, we are way behind, aren't we?

Dr. GUTHRIE. Yes.

MULTIPLE SCREENING PROGRAMS

Mr. FOGARTY. Whatever happened to the old multiple screening programs that we talked about? Are you carrying on any multiple screening programs?

Dr. GUTHRIE. Yes, we are. Some of the original programs in multiple screening were programs somewhat like the original screening for glaucoma. It was done as a one-shot effort.

Mr. FOGARTY. I remember one several years ago in Richmond.

Dr. GUTHRIE. Yes, but unfortunately these one-shot affairs—multiple screening programs—just didn't pay off in terms of the continuing type of followup that is necessary. So there has been a change of thought in the use of the multiple screening technique in that continuing followup is built into projects today. As a technique, it is still considered very worth while, but it should be part of an ongoing health care program so that, whether it be an outpatient hospital clinic, or a physician's office a multiple screening service will be available with appropriate followup on a continuing basis. We can then apply these methods of early detection, in a multiple way and in an ongoing situation. We have a number of studies and activities that are stimulating this continuing kind of program.

Mr. FOGARTY. Give us a couple of examples.

Dr. GUTHRIE. We have a mobile clinic project, for instance, that is being developed here in the city of Washington in which we utilize this technique on a mobile basis, tying together the local hospitals and the practicing physicians with this detection clinic. People who might neglect to come into a hospital or a physician's office are often willing to take a few moments on their lunch hour or after work to go through one of these screening programs if it is close at hand. After they have completed the tests and the results indicate that further diagnostic work is required, they are referred either to their physician or to the hospital clinic with appropriate followup provided by the health department.

Mr. FOGARTY. Well, we have had similar chest X-ray programs that were carried on. This has been going on for a long time.

Mr. GUTHRIE. Yes; they have been very successful.

Mr. FOGARTY. Couldn't other things be tested at the same time?

Dr. GUTHRIE. That is really the principle of this mobile program here. We do chest X-rays, for instance, in this setting.

Mr. FOGARTY. What other tests could be given?

Dr. GUTHRIE. We do electrocardiograms. We take a sample of blood; we take a sample of urine; check their vision; check their hearing. In connection with the blood studies, there are a number of laboratory tests that are performed.

Mr. FOGARTY. Is this unit similar to the ones that are being used in the health survey?

Dr. GUTHRIE. Yes.

The first example is one utilizing a mobile unit. We are also doing this on a permanent basis in the hospitals. We have an experimental program in the Public Health Service hospital in Boston, where we have established a preventive health clinic—available for healthy people to come in and periodically go through a comprehensive screening examination. It doesn't take much time, but we are able to pick up, from this, insidious problems and treat them.

Mr. FOGARTY. Do you get many people?

Dr. GUTHRIE. Yes, we do.

KAISER FOUNDATION HEALTH PLAN

We also have a project with the Kaiser Foundation Research Institute in California, where they are quite interested in the preventive-type service for their people so they can cut down the cost of medical care by preventing them from having a chronic or a long, acute illness. They bring their people in, now, as part of their prepaid health care program, for a periodic, comprehensive, multiple-screening program. According to reports, they are quite pleased with the results they are getting for the money they are putting into this project.

Mr. FOGARTY. Can you develop that a little bit for the record, and what the results are, and how they operate?

Dr. GUTHRIE. Yes.

(The information follows:)

Since 1951, the Kaiser Foundation Health Plan of San Francisco and Oakland has conducted a program of multiphasic screening for its membership. About 25,000 members avail themselves of this service each year. This examination consists of a health history, physical examination of the patient, a series of disease-screening procedures, and health counseling. The screening examination is popular with the membership and is believed to be an effective means of finding cases of chronic disease in the early stages when treatment is most effective. The administrators of the plan believe that the examination could be made less costly, wider in scope, less time consuming for both patient and physician, and more effective by adapting to screening of symptom-free persons, many of the automated diagnostic test techniques currently available, and by developing new techniques. The use of automation and technician time to handle the routine procedures of the examination will free the time of the physician for the more complex areas of diagnosis and health conseling. Thus, the screening procedures would make better use of the skills of the physician. Also, the use of automation would make test results immediately available to the physician, thus eliminating the necessity of a return visit for interpretation of the test findings to the patient.

The Kaiser Foundation Research Institute applied for a project grant and the automated multiphasic screening project began in September 1962 with support from the Public Health Service, as provided for in the Community Health Services and Facilities Act of 1961.

To date considerable progress has been made in developing automated techniques. For example, devices are now available which will automatically process a single blood specimen for blood sugar, cholesterol, creatinine, total protein, albumin, total lipids, transaminase, uric acid, calcium, hemoglobin, syphilis, and white blood cells. Experiments will also be conducted with techniques for the detection of rheumatoid disease through the testing of blood samples, the detection of breast cancer by use of soft tissue X-ray procedures, and mental illness by use of a questionnaire technique.

The test techniques cover most major chronic illnesses including heart disease, cancer of various sites, diabetes, visual impairment (including glaucoma), hearing disability, neurological disease, etc.

It is expected that this project will serve as a prototype for other groups and organizations interested in multiple-screening centers which, through the use of automated techniques, make the benefits of periodic health appraisals available to large numbers of people at reasonable costs.

HISTORY OF DIVISION

Mr. **Denton.** Now your division is comparatively new; it was started about 1962, I believe.

Dr. **Guthrie.** Yes. The present Chronic Disease Division.

Mr. **Denton.** And what activities did you take over that were done by other agencies?

Dr. **Guthrie.** We actually have been administering the chronic disease program in the Public Health Service for some time. This present 1962 composition includes the appropriation structure for the program which we have actually been administering.

Mr. **Denton.** Well, did you not take over some activities that NIH was doing?

Dr. **Guthrie.** No, sir. We have been carrying out the program of heart disease control, of cancer control, of neurological control, and only research grants are new.

Mr. **Denton.** Did NIH not transfer some moneys to you?

Dr. **Guthrie.** Yes, sir.

Mr. **Kelly.** These moneys had been appropriated to the NIH but for some years the NIH has been allocating them to the Bureau of State Services for administration; but now they are being budgeted so the witness who will administer the program will be the one to describe it to you.

Mr. **Denton.** I see.

RELATION OF ACTIVITIES TO NATIONAL INSTITUTES OF HEALTH PROGRAM

How does the work you do conflict with, complement, or coordinate with the work being done by NIH on cancer, mental health, et cetera?

Dr. **Guthrie.** I am glad you said "complement," because we really think we have both sides of the coin in this situation. The Heart Institute, the Cancer Institute, and the Neurological Diseases and Blindness Institute devote their programs to the development of research and new knowledge, with the hope that this can be applicable in cutting down on these disease problems.

We in turn take research knowledge, not only new but existing information, and turn it into practical programs of application.

On the one hand, we are getting the knowledge; on the other hand, we are applying it. We are the applicators.

Mr. **Denton.** It is the difference between basic and applied science in a way.

Dr. **Guthrie.** Yes. In a way, that is a good way to describe it; yes, sir.

RESEARCH GRANTS

Mr. **Denton.** Now in your justifications, on page 61, item 74, you have: Research, $1,952,000 for 1963; and for 1964, $2,257,000, which is an increase of $305,000.

That embraces the items Mr. Fogarty discussed for research which are set forth on page 65 of justification.

Dr. **Guthrie.** These are the research grants that are being transferred from the NIH to the Division of Chronic Diseases this year.

Mr. **Denton.** Yes.

Dr. GUTHRIE. This is the new program I referred to. This is the only really new program that the division has not been administering up to now.

PROJECT REVIEW PROCESS

Mr. DENTON. Who decides on the granting of these research grants?

Dr. GUTHRIE. These will be reviewed in the same process as the research grants reviewed in the NIH mechanism now. We will use the same study section technique and they will go through the same type of review process.

Mr. DENTON. If it is a project dealing with cancer, for example, it will go through their cancer committee, that will decide whether or not it is a worthwhile project?

Dr. GUTHRIE. No, it would not go to the cancer council; if it is an application project in our area of the program, it will go through a study section that is familiar with the application techniques of cancer, and then go, I presume under present plans, to the National Advisory Health Council for approval. Now, I am not certain of——

Mr. DENTON. Do you have a special board that passes on your projects?

Dr. GUTHRIE. Not in research grants in the division. There will be a special study section to deal with these grants, however.

Mr. DENTON. Well, let's go over on page 65. Half a million dollars was requested for cancer under "State control."

Now, who will pass on those projects and determine whether they are good or not?

Dr. GUTHRIE. This is a formula grant and will not be passed on by a review committee.

Mr. DENTON. All right, show me one that is passed on by a review committee.

Dr. GUTHRIE. Our cancer project grants are passed on by our committee, which is appointed by us, and consists of outside-of-government experts.

Now, these are different from the research grants. These cancer project grants are really service projects.

Mr. DENTON. The projects on page 74 in your justifications are the research grants, and they go before your council, your committee, to decide whether or not they are good grants?

Dr. GUTHRIE. Yes. It will be that same process. They will go before one committee to decide their technical research quality and then they will go before another committee to determine their priority as related to the objectives of our program.

Mr. DENTON. I believe you said that you had your own committee that passed on all of these. You do not use the cancer committee of the NIH to pass on a project dealing with cancer?

Dr. GUTHRIE. That is true.

Mr. DENTON. But you use your own committee?

Dr. GUTHRIE. Yes, sir.

Mr. DENTON. You have the same committee that passes on cancer, pass on heart trouble, mental health, and so on?

Dr. GUTHRIE. No, sir.

Mr. DENTON. You have separate committees for each one?

Dr. Guthrie. Yes, sir. They each draw on experts in their respective fields.

Dr. Christensen. Mr. Congressman.

Mr. Denton. Do they overlap in any way or do you have on your committee the same people dealing with cancer as NIH has dealing with cancer?

Dr. Guthrie. There is some overlap. For instance, in the field of epidemiology there is need for this in medical research programs as well as in service programs. This need is necessary on both sides.

Mr. Denton. I see.

Dr. Guthrie. And it is certainly conceivable we can use the same type of person in this professional area to serve both needs. But it would be limited in that sense.

Mr. Denton. I believe you said you had 20 projects.

Dr. Guthrie. In the 14-step cervical cancer control demonstrations, yes, sir.

Dr. Christensen. Mr. Denton, I think we should keep in mind that there are two different things.

When we mention projects, this is a service project with the responsibility and complete administration going through the chronic disease division, where it is reviewed by the Cancer Advisory Control Committee that Dr. Guthrie is talking about.

Mr. Denton. That is the NIH committee?

Dr. Christensen. That is our committee.

Then the research grants could come in and go through the research grant review mechanisms used by the NIH. They go to the Division of Research Grants and then, if they fall within the area of cancer control, they will be transferred down to the chronic disease division and passed on to the study section and go through the identical mechanism that is used by NIH. Now, those are the research grants.

Mr. Denton. And those are the ones that are listed on page 74.

Mr. Kelly. That is right.

Dr. Christensen. Yes, sir.

Mr. Denton. And the others are listed on what page of the justification?

Dr. Guthrie. The cancer project grants are on pages 85, 86, and 87.

Mr. Kelly. There is a relatively detailed table of them on page 87 with respect to cancer, and on page 90, with respect to the neurological projects.

STATE CONTROL PROGRAMS

Mr. Denton. The next you have is item 76, on page 61 of the justifications, which is State control. That includes cancer, heart trouble, and other chronically ill.

I assume that is money that is made available to the States.

Dr. Guthrie. Yes, sir.

Mr. Kelly. Yes, sir.

Mr. Denton. That is set forth on the tables on pages 73, 77, and 83 of the justifications?

Dr. Guthrie. Yes, sir.

Mr. Denton. Could we put those in the record?

Mr. Fogarty. Yes.

(The tables follow:)

Allocations of grant-in-aid funds for cancer control

State or territory	1962 actual	1963 estimate	1964 estimate
Alabama	$72,800	$71,500	$82,400
Alaska	25,000	25,000	25,000
Arizona	25,800	27,200	33,300
Arkansas	47,800	46,900	53,600
California	227,100	229,700	271,500
Colorado	34,300	33,400	39,600
Connecticut	38,200	38,500	44,900
Delaware	25,000	25,000	25,000
District of Columbia	25,000	25,000	25,000
Florida	86,900	91,300	110,700
Georgia	80,000	79,100	91,900
Hawaii	25,000	25,000	25,000
Idaho	25,000	25,000	25,000
Illinois	158,100	159,200	183,400
Indiana	80,200	80,100	92,300
Iowa	55,400	54,500	61,900
Kansas	44,300	43,800	50,300
Kentucky	65,600	65,200	75,000
Louisiana	66,900	66,500	76,900
Maine	25,000	25,000	28,500
Maryland	49,300	49,600	56,900
Massachusetts	90,500	89,000	100,900
Michigan	124,200	125,700	147,200
Minnesota	64,800	64,200	73,300
Mississippi	60,100	59,800	68,200
Missouri	80,800	80,000	91,400
Montana	25,000	25,000	25,000
Nebraska	32,400	31,600	36,600
Nevada	25,000	25,000	25,000
New Hampshire	25,000	25,000	25,000
New Jersey	97,200	98,200	113,300
New Mexico	25,000	25,000	25,700
New York	274,500	272,100	317,200
North Carolina	92,800	91,100	105,500
North Dakota	25,000	25,000	25,000
Ohio	156,900	159,500	187,800
Oklahoma	49,200	48,800	57,200
Oregon	35.600	35.200	41,700
Pennsylvania	198,600	197,700	227,600
Rhode Island	25,000	25,000	25,000
South Carolina	54,000	53,300	61,000
South Dakota	25,000	25,000	25,000
Tennessee	75,500	75,300	86,200
Texas	165.900	167,000	195.900
Utah	25,000	25,000	25,000
Vermont	25,000	25,000	25,000
Virginia	71,000	72.600	84,700
Washington	49,900	50,000	58,800
West Virginia	38,700	37,900	42,700
Wisconsin	72,300	71,700	82,900
Wyoming	25,000	25,000	25,000
Guam	16,800	16,800	16,200
Puerto Rico	57,600	57,600	66,000
Virgin Islands	8,000	8,400	8,900
Total	3,500,000	3,500,000	4,000,000

Allocations of grant-in-aid funds for heart disease control

State or territory	1962 actual	1963 estimate	1964 estimate
Alabama	$118,300	$162,400	$161,800
Alaska	36,800	52,500	52,700
Arizona	57,100	82,900	85,200
Arkansas	84,200	116,000	114,600
California	252,300	353,700	360,000
Colorado	64,300	88,600	89,900
Connecticut	65,700	93,400	93,200
Delaware	39,200	55,800	56,100
District of Columbia	43,200	61,400	61,500
Florida	125,100	180,500	185,700
Georgia	126,500	175,000	175,900
Hawaii	44,300	63,200	63,400
Idaho	46,700	66,100	66,500
Illinois	172,400	243,500	239,800
Indiana	112,500	157,500	156,400
Iowa	85,500	118,000	115,600
Kansas	73,600	102,400	101,500
Kentucky	106,000	147,400	145,700
Louisiana	107,500	149,000	148,300
Maine	52,900	74,400	74,400
Maryland	82,200	115,600	114,300
Massachusetts	111,000	153,700	150,400
Michigan	154,300	217,900	220,100
Minnesota	96,300	134,100	131,700
Mississippi	103,600	144,200	142,700
Missouri	108,800	150,000	147,100
Montana	45,100	64,200	64,900
Nebraska	59,600	83,200	83,000
Nevada	37,500	53,600	54,200
New Hampshire	44,400	63,100	63,000
New Jersey	117,400	165,800	164,600
New Mexico	52,600	74,900	75,400
New York	261,800	361,600	361,800
North Carolina	146,600	200,600	200,500
North Dakota	47,200	66,300	66,300
Ohio	181,800	258,900	263,400
Oklahoma	81,200	112,900	114,100
Oregon	63,700	89,000	89,900
Pennsylvania	217,300	301,900	298,600
Rhode Island	47,700	67,700	67,500
South Carolina	98,800	136,800	135,900
South Dakota	48,600	67,700	67,700
Tennessee	119,800	166,400	164,500
Texas	216,200	301,800	305,900
Utah	50,800	71,900	72,600
Vermont	41,000	58,200	58,000
Virginia	112,400	159,600	160,800
Washington	79,200	111,700	112,800
West Virginia	74,000	102,100	99,400
Wisconsin	102,000	142,500	142,800
Wyoming	39,000	55,400	55,900
Guam	23,500	33,500	32,300
Puerto Rico	109,300	152,700	151,800
Virgin Islands	11,200	16,800	17,900
Total	5,000,000	7,000,000	7,000,000

Allocations of grant-in-aid funds for the chronically ill and aged

State or territory	1962 actual	1963 estimate	1964 estimate
Alabama	$138, 800	$301, 200	$302, 400
Alaska	40, 000	60, 000	60, 000
Arizona	40, 000	83, 300	85, 900
Arkansas	104, 400	222, 000	217, 500
California	356, 300	829, 800	838, 400
Colorado	52, 200	114, 800	114, 600
Connecticut	56, 900	130, 000	131, 400
Delaware	40, 000	60, 000	60, 000
District of Columbia	40, 000	60, 000	60, 000
Florida	168, 900	416, 900	425, 600
Georgia	143, 600	321, 200	321, 500
Hawaii	40, 000	60, 000	60, 000
Idaho	40, 000	60, 000	60, 000
Illinois	253, 500	571, 900	571, 000
Indiana	143, 600	320, 400	320, 300
Iowa	111, 500	237, 100	231, 300
Kansas	80, 500	175, 800	173, 200
Kentucky	133, 100	294, 500	292, 200
Louisiana	111, 700	255, 600	255, 800
Maine	40, 300	85, 600	86, 200
Maryland	72, 700	167. 500	165, 600
Massachusetts	150, 300	338, 000	334, 100
Michigan	197, 600	449, 800	459, 100
Minnesota	121, 200	265, 200	260, 200
Mississippi	121, 600	271, 400	267, 400
Missouri	152, 900	338, 200	333, 800
Montana	40, 000	60, 000	60, 000
Nebraska	54, 100	117, 900	115, 300
Nevada	40, 000	60, 000	60. 000
New Hampshire	40, 000	60, 000	60, 000
New Jersey	143, 900	332, 600	332, 700
New Mexico	40, 000	60, 000	60, 000
New York	417, 900	941, 200	939, 200
North Carolina	168, 100	370, 400	368, 500
North Dakota	40, 000	60, 000	60, 000
Ohio	262, 000	600, 800	611, 600
Oklahoma	92, 700	205, 200	206, 200
Oregon	58, 300	126, 400	127, 600
Pennsylvania	339, 900	759, 900	762, 100
Rhode Island	40, 000	61, 600	61, 800
South Carolina	96, 700	209, 200	207, 500
South Dakota	40, 000	64, 100	62, 400
Tennessee	145, 000	328, 400	325, 600
Texas	284, 500	653, 300	657, 900
Utah	40, 000	60, 000	60, 000
Vermont	40, 000	60, 000	60, 000
Virginia	119, 800	277, 900	279, 000
Washington	83, 600	188, 200	189, 300
West Virginia	74, 800	159, 300	157, 100
Wisconsin	131, 000	286, 800	287, 600
Wyoming	40, 000	60, 000	60, 000
Guam	40, 000	60, 000	60, 000
Puerto Rico	96, 100	223, 600	221, 100
Virgin Islands	40, 000	60, 000	60, 000
Total	6, 000, 000	13, 000, 000	13, 000, 000

STATE USE OF GRANT MONEY

Mr. DENTON. Now, you give those moneys to the States for these various projects. Do the States make grants for research or grants for cancer projects or heart projects? Or just what do the States do with their money?

Dr. GUTHRIE. These moneys in the State control grants are primarily to provide a focus in the States for control programs.

The States have a great deal of latitude in how they use these funds. They may set up a central unit, staff it with experts to provide continuing consultation and technical assistance within the State on control programs. They can, if they wish, make these funds available to set up specific control projects within the State.

Of course, when you break this money down and allocate it to 50 States, it is not too large a sum of money. In the smaller States, it is used to provide a few expert personnel who can be of assistance to the State agencies and to the local agencies to stimulate control activities.

Mr. DENTON. Has there been any plan submitted to you?

Dr. GUTHRIE. Yes, sir, they submit a plan to us in advance stating how they wish to use these funds. If we are in disagreement, we meet with them and work out a program that is mutually acceptable.

Mr. DENTON. Now, the next item on that page is project grants. That is 85.

Dr. GUTHRIE. Yes, sir.

Mr. DENTON. Are those the projects Mr. Fogarty talked about that are listed on page 65?

Mr. KELLY. Yes, sir.

Mr. DENTON. Who handled those projects before your agency was set up?

Dr. GUTHRIE. We have been administering these projects right along.

DIRECT OPERATIONS

Mr. DENTON. Then the next comes over on page 62, which is "Research and training and technical service," which embraces cancer control, diabetes, heart control, neurological and sensory disease control, and health service for long-term illness.

Dr. GUTHRIE. These are our direct operating programs. Those on the other page were our grants which we make available to States and to outside organizations and institutions to promote control programs.

Mr. DENTON. Those are your intramural programs?

Dr. GUTHRIE. Those are extramural. That is our extramural program.

These listed on page 62 are our intramural program.

Mr. DENTON. You do that work yourself?

Dr. GUTHRIE. Yes, sir. These are our own staff people.

INCREASE IN NUMBER OF EMPLOYEES

Mr. DENTON. Now you have, in 1963, 840 permanent positions and in 1964 you want 869, which is an increase of 29.

Dr. GUTHRIE. Yes, sir.

Mr. DENTON. And the full-time equivalent of all other positions is 60 in each year?

Mr. KELLY. That is correct.

Mr. DENTON. Here is the thing that bothers me again, Mr. Kelly. For the average number of all employees for 1963, you have 777, and for 1964, 824; that is an increase of 47. The thing that bothers me is this: the number of employees at the end of the year, 1963, 950, and 1964, 979, an increase of 29.

What I cannot understand is why that great increase at the end of the year over the average number employed?

Mr. KELLY. I gave you a partial explanation the other time.

Let me tell you, in preparing this budget document, we have to tie in with the figures which we report to the Civil Service Commission under their prescription as to how many people are working. The employment that occurs which gives that peculiar characteristic to the employment figures, and particularly the Public Health Service, is that if we employ a consultant on any day in the month of June, he is treated as being an employee on June 30. That means that every study section that met, every council that met, all of those people are treated as if they were employees on June 30.

Now, at some time during the month, they work 1 or more days; but they are counted as employees at the end of the month. I did not make that rule.

FOLLOWUP ON MEMPHIS CANCER STUDY

Mr. **Denton.** Just one other thing about the Memphis investigation of women for cancer of the female organs. The check they made, when I was down there, they told me, required a followup. They said that was important. They had these records and they made this very thorough check in that community; but they said their chief value would be to see the effect 4, 5, or 10 years from now.

What ever has been done about following that up and how important is it?

Dr. **Guthrie.** We are staying right with that Memphis project. That is a long-term project and we are interested in that same factor, because there was certainly a great deal of public education in and around Memphis when this program was going on and that was part of the purpose for it. We want to continue to evaluate how well this education lasts and how often we have to kind of reinject some——

Mr. **Denton.** You still have a group working down there? Or would that be under the cancer appropriation of NIH?

Dr. **Guthrie.** We may still have some activities in Memphis, either full time or part time, and I am just not exactly certain at the moment what it is. I can supply that information to you.

(The data follow:)

Uterine Cancer Case Findings by Vaginal Cytology, Memphis and Shelby County, Tenn.

In August 1952, this project began, with a population of over 200,000 adult women to serve. The goals of the study were:

1. To determine whether periodic vaginal exfoliative cytology as a screening procedure can be used to diagnose cancer in the preinvasive stage.
2. To accumulate data for determining age-specific incidence and prevalence for both preinvasive and invasive cervical cancer.
3. To estimate the frequency with which vaginal cytology needs to be applied to be effective as a case-finding procedure.
4. To determine whether, through this case-finding procedure, cervical cancer can become largely a curable disease.

In the following years the hypotheses represented by these goals were affirmed, and much additional information concerning the operation of cervical cancer control projects was gained.

Originally, the Public Health Service, the University of Tennessee, and the Memphis and Shelby County Health Department all contributed staff and facilities to the project. Public Health Service personnel were withdrawn some years ago, and the continuing activity has been carried on by local personnel.

The University of Tennessee, now aided by a research grant from the Public Health Service, is currently evaluating the project, with primary emphasis on its long-term effects.

The cancer control program has drawn heavily upon the experience of the Memphis project, in developing its 14-step pattern for cervical cancer control projects. Dr. Lloyd M. Graves of the Memphis and Shelby County Health Department has served 4 years as a member of the Advisory Committee to the cancer control program, and many others who participated in or observed the Memphis-Shelby County study have been called into consultation.

Mr. DENTON. As I remember, that was a small group there at that time, at the university.

Dr. GUTHRIE. Certainly this followup is most important. One of the reasons we spend so much time in these cancer projects, why we have developed the so-called 14 steps, is that it is just not of value to go into a community and stir up interest unless the proper kind of followup program is provided on a continuing basis.

LOCATION AND DUTIES OF STAFF

Mr. DENTON. How many of your employees work here in Washington?

Dr. GUTHRIE. Approximately half are here in Washington.

Mr. HAMBLETON. Of the 840, there are 434 in Washington.

Mr. DENTON. How many of those are engaged in research?

Dr. GUTHRIE. Offhand I could not give you that percentage. But I would say roughly it is a small percentage that are actually engaged in direct research on a full-time basis.

The majority of our staff are engaged in providing technical assistance and act as consultants to National- and State-level organizations and groups.

Mr. DENTON. Would you elaborate a little bit more on just what they do?

Dr. GUTHRIE. For instance in the cancer control program we have professional people in the program who are available to go out to any community that is interested in setting up a cervical cancer demonstration program. We can go out and meet with their people and show them the know-how and get them to bring together the appropriate resources necessary to develop a quality project. We have people of this type. We use multiple groups of professional people to do this—not only physicians, but senior level nurses, statisticians, and various technicians who are qualified consultants.

Mr. DENTON. This 400—how many did you say?

Mr. HAMBLETON. 434.

Mr. DENTON. Of these 434 here, how many are Public Health doctors?

Dr. GUTHRIE. Again, I do not have the breakdown in categories right at hand, but——

Mr. DENTON. What I am trying to get, how many are technicians and how many are clerical help?

Dr. GUTHRIE. The predominant group is professional or technical. I do not know what the ratio of professional to clerical people is.

They are predominantly senior level professional or technical people with a supporting staff of clerical nature.

Mr. DENTON. Where are your offices?

Dr. GUTHRIE. Over at Seventh and D Streets in the GSA Building.

Mr. DENTON. Seventh and D?

Dr. GUTHRIE. Southwest.

Mr. DENTON. How many do you have out in the field, about 400 in the field?

Dr. GUTHRIE. We have 406 positions in the field.

Mr. DENTON. And where are they assigned, to regional offices?

Dr. GUTHRIE. They are assigned to a variety of situations. They are in our regional offices on assignments to State and local communities, and we have a series of special laboratories and field centers.

Mr. DENTON. How many of them are technical, and how many are clerical?

Can you supply that for the record?

Dr. GUTHRIE. Yes, sir.

Mr. KELLY. We will.

(The information follows:)

Of the 406 positions located in the field, 164 are physicians, 166 are professional and technical, and 76 are clerical.

The "Professional and technical" category includes nurses, nutritionists, public health advisers, physical therapists, statisticians, and medical technicians.

Mr. DENTON. Will you do the same thing about your office here in Washington?

Dr. GUTHRIE. We will.

(The information follows:)

Of the 434 positions located in Washington, 58 are physicians, 245 are professional and technical, and 131 are clerical.

The "Professional and technical" category includes nurses, nutritionists, public health advisers, physical therapists, statisticians, and medical technicians.

Mr. DENTON. I believe that is all.

Mr. FOGARTY. Mr. Lesinski.

Mr. LESINSKI. I will be very short, Mr. Chairman.

Mr. FOGARTY. Take your time. We have plenty of time.

Mr. LESINSKI. What is the cause of diabetes?

Dr. GUTHRIE. It is a complex metabolic defect, the major disturbance being in the carbohydrate metabolism in the body; the body's inability to handle sugars properly.

Mr. LESINSKI. The questions that I had in mind, Mr. Denton, my colleague, has gone over pretty well and I have my answers already.

One thing, Mr. Denton, I think the reason for the high employment—they have money left over, they have not spent in the prior calendar year; they hire additional employees in June. That is the reason for the higher employment.

Mr. KELLY. I think that is suspected, Mr. Lesinski, but when we tell you how many employees we will have, we very carefully try and control that so that we do not come back and have you say: you told us we would have 200 and we have 250. So we identify in advance how many employees we expect to have and then we work rigorously to stay within those figures. So even if there is money left over, we would not increase the employment.

Mr. LESINSKI. You do not know in advance how many employees you are going to have. You project the figure to us that you hope to hit and if you do not hit it, then you throw it in in June.

Dr. TERRY. That is not true.

RESEARCH CONTRACT AND GRANT PROJECTS

Mr. LESINSKI. Mr. Kelly, I would like to have you prepare a recapitulation at the end of the hearings to be put in the hearings all of the contracts and grants, per disease and per program, and also the total cost of each.

Mr. DENTON. I do think on that, you ought to show not only the projects that you have money for, but the rest of the approved applications, too.

Mr. KELLY. The unfinanced projects?

Mr. DENTON. Yes. I think we ought to have that.

Mr. FOGARTY. We will put both statements, or one combined statement if it is more meaningful that way, in the record at the end of the Public Health Service hearings.

(The information appears at p. 701.)

Mr. LESINSKI. That is all, Mr. Chairman.

Mr. FOGARTY. Anything else, Dr. Terry?

Dr. TERRY. I think it is very well covered, Mr. Chairman.

TUESDAY, MARCH 5, 1963.

COMMUNICABLE DISEASE ACTIVITIES

WITNESSES

DR. JAMES L. GODDARD, CHIEF, COMMUNICABLE DISEASE CENTER
DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES
DR. ALAN W. DONALDSON, DEPUTY CHIEF, COMMUNICABLE DISEASE CENTER
LELAND W. SMITH, FINANCIAL MANAGEMENT OFFICER, COMMUNICABLE DISEASE CENTER
JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	5, 997	6, 607	9, 594
	Positions other than permanent	168	224	1, 239
	Other personnel compensation	72	86	157
	Total personnel compensation	6, 237	6, 917	10. 989
12	Personnel benefits	772	776	1. 117
21	Travel and transportation of persons	412	525	843
22	Transportation of things	74	130	346
23	Rent, communications, and utilities	411	468	625
24	Printing and reproduction	62	79	170
25	Other services	274	311	1, 823
	Services of other agencies	----------	----------	1
	Payment to—			
	"Bureau of State Services management fund"	210	241	492
	"National Institutes of Health management fund"	19	21	22
26	Supplies and materials	1, 547	887	1, 389
31	Equipment	469	385	2, 019
41	Grants, subsidies, and contributions	1, 400	1, 591	10, 595
42	Insurance claims and indemnities	1	----------	----------
	Subtotal	11, 889	12, 332	30, 431
	Deduct quarters and subsistence charges	1	1	2
	Total obligations	11, 887	12, 331	30, 429

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	1, 203	1, 260	2, 048
Full-time equivalent of other positions	32	41	175
Average number of all employees	1, 051	1, 144	1, 767
Number of employees at end of year	1, 122	1, 200	2, 004
Average GS grade	6. 3	6. 5	6. 3
Average GS salary	$5, 668	$6, 175	$5, 728
Average salary of ungraded positions	$4, 753	$4, 750	$4, 736

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	1,400	1,591	1,736
(*b*) Community immunization			10,205
2. Research, training, and technical services	10,051	11,195	18,488
Total program costs, funded [1]	11,451	12,786	30,429
Change in selected resources [2]	436	−455	
Total obligations	11,887	12,331	30,429
Financing:			
Comparative transfers from other accounts (−)	−1,215	−2,269	
Unobligated balance brought forward (−)	−892		
Unobligated balance lapsing	208		
New obligational authority	9,988	10,062	30,429
New obligational authority:			
Appropriation	10,000	10,062	30,429
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353) (−)	−12		
Appropriation (adjusted)	9,988	10,062	30,429

[1] Includes capital outlay as follows: 1962, $329,000; 1963, $435,000; 1964, $1,956,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $245,000 (1962 adjustments, $79,000); 1962, $760,000; 1963, $305,000; 1964, $305,000.

GENERAL STATEMENT

Mr. FOGARTY. The committee will come to order.

We have before us this morning the Communicable Disease Center budget.

Dr. Goddard, are you going to read a statement?

Dr. GODDARD. Yes, sir, with your permission I would like to read a summary statement and submit a statement for the record.

Mr. FOGARTY. All right.

(The prepared statement follows:)

Mr. Chairman and members of the committee, even though significant, at times dramatic, accomplishments have been made in the control of communicable diseases in the United States as compared with many other parts of the world, we still must deal with a multitude of problems if current gains are to be maintained and if progress is to continue. In 1961 there were over 1,340,000 reported cases of the notifiable infectious diseases and an additional 650,000 cases of optionally reported diseases. Such reports really reflect only a small part of the total problem as is illustrated by National Health Survey estimates that 347 million episodes severe enough to require medical attention occur each year. These acute infections cause a significant loss to our national economy in terms of 175 million man-days lost per year, of yearly dollar costs in the billions, and of 150,000 deaths annually. To these effects must be added the relationships of certain infectious diseases to chronic conditions; for example, hepatitis to permanent liver damage, streptococcal infection to rheumatic fever and rheumatic heart disease, and viral encephalitis to permanent injury to the brain.

There are communicable diseases whose incidence has not abated or even may have increased and for which practical measures of prevention or effective treatment are yet to be revealed. The list is a depressingly long one and includes the common cold, viral encephalitides, hepatitis, meningococcal meningitis, infectious mononucleosis, schistosomiasis, epidemic strains of staphylococcus, and many others. Some of them are common, others are rare, but all of them cost time, money, comfort, and in some instances life.

EPIDEMICS

Despite our overall progress, epidemics of infectious diseases still occur in this country. Influenza epidemics occurred in 1957–58, 1960, and 1962, resulting in an excess mortality from pneumonia-influenza during the period 1957–62 of an estimated 113,000 deaths. Epidemics of St. Louis encephalitis occurred in one State in 1959, 1960, and 1962, the last resulting in several hundred cases and 20 deaths. Outbreaks of hepatitis have occurred in various parts of the country during both 1961 and 1962, with upward of 72,000 cases being reported in 1961 and over 50,000 in 1962.

LOW-INCIDENCE PROBLEMS

Paradoxically, even the low incidence of certain diseases causes problems in that practicing physicians and diagnostic laboratories find it difficult to maintain competency in dealing with these infections. Yet delay or error in diagnosing these infections may lead to disastrous results for both the individual patient and the community. Equally serious is the apathy toward immunization procedures against diseases of low incidence. This coupled with no opportunity to develop naturally acquired immunity can lead to the evolution of a highly susceptible population in which explosive epidemics could occur.

SAFEGUARDS NEEDED DUE TO INTERCONTINENTAL TRAVEL

Reference was made above to the relatively favorable situation in the United States as compared to other countries. Increasing and more rapid intercontinental travel puts an ever greater strain on safeguards set up to prevent the introduction of diseases into this country. We are continually at risk of the introduction of exotic infections completely foreign to the United States. As an example, one of our citizens contracted South African tick typhus in Africa, traveled to the United States during the incubation period, and developed symptoms and was diagnosed only after he had reached his home in the United States. Thus, we must develop and maintain a current and adequate intelligence of disease conditions on a global basis and provide assistance to other countries in dealing with their communicable disease problems. When such introduction does occur, as for example, smallpox, we must be prepared to take immediate and effective steps to meet such situations.

APPLICATION OF CONTROL TECHNIQUE

For some diseases, such as paralytic poliomyelitis, diphtheria, tetanus, and whooping cough, effective prevention awaits only the diligent extension of application of presently available control measures as provided for in the Vaccination Assistance Act. For others, such as gastroenteritis, viral encephalitis, and institutional infections, progress will depend on the development of better control techniques than we now have. Still other diseases, of which hepatitis is an example, require the acquisition of information and tools which are currently not available.

To meet these needs, the program of the Communicable Disease Center is highly diversified, involving research both at the laboratory bench and in the field, epidemiological investigations, surveillance, evaluation of control techniques, training and the production of biomedical audiovisual materials, technical assistance and consultation, demonstrations, and epidemic aid. This diversified approach, oriented primarily toward providing either direct or indirect assistance to the States, has been developed over the 17 years the Center has been in existence. Through these activities we have been able to (1) develop a continuing and current surveillance of the more important diseases, permitting for example an essential source of information regarding problems associated with the use of poliomyelitis vaccines; (2) provide training to public health workers of all disciplines from every State and numerous foreign countries, approximately 5,000 individuals having received such training during the past fiscal year alone; (3) produce biomedical audiovisual materials, ranging from a production on the laboratory diagnosis of salmonellosis to a film on biology and control of domestic flies; (4) test, evaluate, and improve control procedures, as in the current field trials of measles and influenza vaccines; (5) develop more rapid and efficient diagnostic procedures, exemplified by the remarkably useful fluorescent antibody technique; (6) demonstrate communicable disease control techniques to communities, with a project now operating in one city and three others scheduled in 1964; and (7) repeatedly provide technical assistance, consultation, and epidemic aid to States, extending from a dog sled safari on hepatitis in Alaska to a full laboratory-field team on encephalitis in Florida. Backing up all of these service activities is a supporting program of applied research seeking new and more effective means of controlling the infectious diseases.

Six program activities will receive particular emphasis in 1964 and will be discussed in somewhat more detail: research grants, community immunization, national laboratory improvement and reference services, training of public health workers, medical audiovisual services, and *Aedes aegypti* eradication.

RESEARCH GRANTS

This estimate includes funds to support extramural research in the field of communicable disease control, the base for which has been transferred from the National Institutes of Health. The purpose of the newly organized research grants program in CDC is to bridge the gap between the discovery of basic principles or knowledge and the application of this information to the field of communicable disease control. It should be effective in developing useful control measures of many types that can be put to use in the community on a practical basis, with a minimum of elapsed time between development and application.

COMMUNITY IMMUNIZATION

This estimate includes in its base a proposed supplemental in 1963 for a community immunization program. Of 20.3 million children under five in this country, only 6.4 million have received the vaccinations that they need against poliomyelitis, diphtheria, tetanus, and whooping cough. The Vaccination Assistance Act of 1962 authorizes grants to States for intensive immunization programs against these diseases. These grants may be used in intensive community vaccination programs to purchase vaccines needed to protect children under five and to cover costs incident to organization, promotion, and surveillance of the community program. Vaccination programs organized on a community basis represent a highly effective method of reaching population segments most in need of protection against these four diseases.

NATIONAL LABORATORY IMPROVEMENT AND REFERENCE SERVICES

Funds provided in 1963 permitted the initiation of a nationwide program aimed at the wider and more rapid utilization of newer diagnostic procedures by laboratories throughout the country. Responsibility for the program has been assigned to a newly constituted organizational entity within the Center, basic staff has been acquired, and the operational phases of the program have been started. Increased funds requested in 1964 will permit the planned expansion of this activity in its five major areas: (1) standardization of diagnostic methodology, (2) evaluation of test results within and between laboratories by specimen exchange, (3) consultation, visitation, and troubleshooting, (4) improved and expanded reference diagnostic activities, and (5) laboratory training. The goal of this program, early and accurate laboratory diagnosis by public health and private laboratories everywhere in the country, is an essential element in reducing still further the morbidity and mortality caused by the infectious diseases.

TRAINING OF PUBLIC HEALTH WORKERS

There are more than 1 million health workers in the United States. There are 240,000 physicians and 500,000 professional nurses; health departments employ some 60,000 professionals and hospitals employ 1,100,000 people. Every mechanism available—seminars, symposia, refresher courses, workshops—must be used if up-to-date information is to be made available to members of this health team. Bringing the more rapid and newer diagnostic and treatment tools to these health workers at accelerated rates is imperative in view of the shortage of health facilities and manpower in our country. Techniques to provide continuing education—television, longplay records, special purpose radio, and programed instruction—must be developed, organized, evaluated, and put to use.

Continuing education of health workers is needed on a broad front, but the infectious diseases deserve particular attention. Problems of communicable disease control are constantly changing. The delicate host-parasite relationship is upset daily by changes in modern living. The extensive reclamation of land through irrigation has increased the epidemic potential of the arthropod-borne diseases. The rapid expansion and increased use of recreational areas are already overstraining existing sanitary facilities and greatly increasing the risks of epidemic vector-borne and sewage-borne diseases. Urbanization and crowding have increased the threat of spread of the contact diseases; the expanding use of hospitals and the great increase in the number of nursing homes have resurrected many old and some new infectious disease problems. Research on such problems is keeping abreast but the current knowledge of the practicing health professions is lagging behind.

The Communicable Disease Center's program of continuing education is directed toward the whole public health team, workers of all disciplines—whether these workers be located in official or nonofficial health organizations, in hospitals, in academic institutions, or in private practice—who promote, maintain, or restore health. The Center synthesizes the results of its own studies with those of other educational or research facilities and transmits that information needed to keep the health professions current on disease control techniques.

The Center will expand its present programs—refresher training, manuals, workshops, symposia, seminars, etc.—to make available current information on infectious diseases for all members of the health team. New communications techniques will be developed for all diseases and information presented as often as needed. This program will materially increase its attention to the basic value and necessity for conferences, institutes, and seminars, which it promotes or sponsors.

MEDICAL AUDIOVISUAL SERVICES

The use of audiovisual materials, including motion pictures, filmstrips, television, and radio tapes, has a demonstrated value in providing health information to all groups concerned, from the practicing physician to the lay public. These techniques have been used by the Center since its beginning, largely on a domestic basis. About a year ago, a group of distinguished experts in the field of medicine and communications prepared a report which pointed out that motion pictures offer an ideal means of transmitting technical information across national boundaries and, therefore, would be useful in medical education throughout the world. The group recommended that the Public Health Service undertake an ambitious program of international exchange of medical audiovisuals. Benefit from such a program would accrue not only to other countries but also to the United States in that a mechanism would be developed to bring together in one place information on all medical motion pictures produced throughout the world. This would inevitably allow and stimulate greater utilization of excellent foreign films here in the United States.

The proposed program will consist of (1) the comprehensive cataloging of medical audiovisual aids available in this and other countries, (2) selective improvement of their distribution and utilization here and abroad, (3) translation of scripts and adoptation of existing medical films to meet content and language requirements in specific areas of the world, and (4) the production of new audiovisual materials designed to meet demonstrated medical and health needs.

"AEDES AEGYPTI" ERADICATION PROGRAM

In October 1961, the Directing Council of the Pan American Sanitary Bureau passed a resolution recommending that all member nations still infested with *Aedes aegypti* take steps to accomplish eradication of the mosquito by 1966. A similar resolution was passed by the Council in September 1962. These actions were the accumulation of more than a decade of concern in the Americas over the continuing threat of yellow fever. During that period, 13 Central and South American countries and 3 territories achieved eradication. The United States, a party to the above resolution, constitutes a major source of possible reinfestation of Latin America.

To fulfill our international commitment as a member of the American nations, we have formulated a 5-year program to eradicate the *Aedes aegypti* mosquito from the United States, Puerto Rico, and the Virgin Islands, followed by a normal surveillance program of 2 years. This planning has drawn heavily upon experience gained from operation of a pilot eradiction project conducted by the Communicable Disease Center in Pensacola; knowledge of the operational and technical experiences encountered by Latin American countries in eradication efforts; information on current status of vector control activities of State and local departments of health; and current knowledge of the distribution and density of *Aedes aegypti* infection in the United States. The current request will permit the initiation of a program for eradication of this mosquito from the continental United States, Puerto Rico, and the Virgin Islands.

SUMMARY

In summary, this estimate of $30,429,000 provides funds for a full-scale program in community immunization grants to immunize children under school age against polio, diphtheria, whooping cough, and tetanus; to launch a program for eradication of *Aedes aegypti* from the continental United States, Puerto Rico, and the Virgin Islands; and to continue expansion of the broad program of medical, epidemiology, technology, laboratory improvement, and training to State and local health departments for the control, prevention, and suppression of communicable diseases. For all the purposes included in this estimate, an increase of $7,393,000 is requested (including $5 million for *Aedes aegypti* eradication) which together with a decrease in funds for community immunization grants of $1,895,000 results in a net increase of $5,498,000.

Dr. Goddard. Mr. Chairman, and members of the committee: In 1961 there were over 1,340,000 reported cases of the notifiable infectious diseases and an additional 650,000 cases of optionally reported diseases. Such reports really reflect only a small part of the total problem, as is illustrated by National Health Survey estimates that 347 million episodes severe enough to require medical attention occur each year.

NEW MEANS OF CONTROLLING DISEASES

Our scientists are continually alert to new discoveries that may offer new means of controlling communicable diseases. Such knowledge, diligently applied, has already suppressed many diseases; however, their epidemic potential forces us to continue adequate control measures.

For some diseases, such as paralytic poliomyelitis, diphtheria, tetanus, and whooping cough, effective prevention awaits only the diligent extension of application of presently available control measures as provided for in the Vaccination Assistance Act. For others, such as gastroenteritis, schistosomiasis, viral encephalitis, and institutional infections, progress will depend on the development of better control techniques than we now have. Still other diseases, of which hepatitis is an excellent example, require the acquisition of information and tools which are currently not available.

1964 PROGRAM EMPHASIS

In 1964 six program activities will receive particular emphasis.

The estimate includes funds to support extramural research in the field of communicable disease control, the base for which has been transferred from the National Institutes of Health. This newly organized program in the Communicable Disease Center will be effective in developing useful control measures that can be put to use in the community on a practical basis.

The estimate provides for a full-scale program in community immunization grants to immunize children under school age against polio, diphtheria, whooping cough, and tetanus. These grants may be used for the purchase of vaccines and to cover the costs incident to organization, promotion, and surveillance of the community programs.

Our national laboratory improvement and reference services, begun on a small scale in 1962, will be expanded in five major areas: (1) standardization, (2) evaluation, (3) consultation, (4) reference diagnostic activities, and (5) laboratory training.

Training of health workers will also be accelerated in all aspects of communicable disease control. This is designed to improve the performance of the workers, widen their areas of competence, and speed the application of new knowledge. It is the most effective means presently available for keeping workers up to date with scientific research and development.

The Center has unique facilities for the development of audiovisual aids such as motion pictures, filmstrips, slides, filmograph, and audio tapes for scientific and disease control purposes. About a year ago, a group of experts in the field of medicine and communications prepared a report that pointed out that motion pictures offer an ideal means of transmitting technical information across national boundaries and, therefore, would be useful in medical education throughout the world. Our request for 1964 includes funds for the initiation of a program for the international exchange of medical motion pictures.

To fulfill our international commitment as a member of the American nations, we have formulated a 5-year program to eradicate the *Aedes aegypti* mosquito, the vector of yellow fever, from the continental United States, Puerto Rico, and the Virgin Islands. The current request will permit the initiation of this program.

INCREASE REQUESTED FOR 1964

The estimate of $30,429,000 provides increases totaling $7,393,000 which, together with a decrease in funds for community immunization grants of $1,895,000, results in a net increase of $5,498,000. Of the increase, $5 million is for *Aedes aegypti* eradication.

Mr. DENTON. For what?

Dr. GODDARD. *Aedes aegypti* eradication.

Mr. Chairman, I shall be glad to answer any questions you may have about this program and the budget request.

Mr. FOGARTY. Thank you, Doctor.

The appropriation for 1963 for the activities included in the 1964 budget is $24,931,000, including the pending supplemental request of $12,600,000, and the request for 1964 is $30,429,000, an increase of $5,498,000, and 730 positions.

Have the 1963 Pay Act costs all been absorbed?

Dr. GODDARD. Yes, sir.

TRANSFER OF ACTIVITIES FROM NIH

Mr. FOGARTY. Now first, what type of activities are being transferred to your budget?

Dr. GODDARD. From the National Institutes of Health, sir?

Mr. FOGARTY. From anywhere.

Dr. GODDARD. I mentioned the transfer of research grants activities in the field of communicable diseases from the National Institutes of Health to the Communicable Disease Center, which takes place this coming fiscal year. And in that, we requested a slight increase in the funding for 1964.

Apart from that there are no additional major transfers——

Mr. FOGARTY. How is that working out?

Dr. GODDARD. Of course, we have just begun to operate in this field and do need experience in the grants activity. We have gathered together a staff which will be carrying out the research grants program for the Center. We are confident that by bringing together the research grants program with the group responsible for the technical advice and consultation to the States we can accrue major benefits in the control of communicable diseases. Primarily, we anticipate earlier application of knowledge that is developed from the research activities. They will work hand in glove with our personnel who work with States.

Mr. FOGARTY. And your work concerns itself with all communicable diseases related to human beings. In some cases like encephalitis, rabies, and other diseases they affect animals, also?

RABIES

Dr. GODDARD. Yes. We naturally are quite interested in those diseases of animals that are transmissible to man. This, as you have indicated, does include rabies, a continuing problem throughout the United States, I might add, and particularly along our border adjacent to Mexico.

Mr. FOGARTY. When Mr. Lanham of Georgia was a member of this committee, he was quite interested in this problem. It was a real problem in his State a few years ago.

Dr. GODDARD. We could, if you wish, give you some recent information on that.

Mr. FOGARTY. We put some additional funds in the bill because of his interest in the problem.

Dr. GODDARD. Of course, dogs still continue to be a major part of the problem, but increasingly we are finding that the wildlife reservoir of rabies plays a more and more important part in terms of the threat and the actual transmission of the disease to humans.

One interesting feature which you may have heard about is the fact that bats are a natural carrier of rabies. We have a group studying the problem of rabies in bats and, for the first time, they have demonstrated that airborne transmission of rabies can occur—now this is the first time this has ever been known to happen. The bats that they have been studying are in the caves in southern Texas, the Frio Cave, and also, they inhabit the Carlsbad Caverns. Bats have been known to bite humans and transmit the disease in this fashion.

We are very much concerned with all these natural reservoirs of diseases transmissible from animals to man. Encephalitis, as you mentioned, is another good example.

ENCEPHALITIS

Mr. FOGARTY. We have two or three kinds of encephalitis strains.

Dr. GODDARD. Yes, we have to deal with Western, St. Louis, and Eastern.

Mr. FOGARTY. There is an outbreak someplace about every year.

Dr. GODDARD. Yes. There is a lot about encephalitis we don't fully understand. We don't know how the virus winters and thus is available for the mosquito to pick up from the host the next summer.

You may recall we had a serious outbreak in one of the Southern States last fall.

Mr. FOGARTY. Which State?

Dr. GODDARD. Florida. In the St. Petersburg area.

There was a 10 percent case fatality rate; 20 deaths.

Mr. FOGARTY. You are talking about human beings?

Dr. GODDARD. Yes. I am referring to humans.

The culprit is *Culex nigripalpus* which commonly breeds around homes and casual water in the yard, in tin cans and things of this nature. There were a number of factors that precipitated this outbreak. The marked increase in the bird population in the St. Petersburg area was thought to be an important factor.

Mr. FOGARTY. Were you doing some of this work in the quarantine station in Florida, in Miami?

Dr. GODDARD. No; we actually——

Mr. FOGARTY. Three or four years ago you were doing something.

Dr. GODDARD. We had some short-term studies involving collection of mosquitoes going at one time. But our major activities in encephalitis are centered in Greeley, Colo., where they are studying the natural occurrence of the disease by posting sentinal flocks, some in the mountainous areas and some out on the plateaus. By studying the blood drawn from the chickens at intervals they can study the rates of infection.

In Massachusetts we are studying Eastern encephalitis. And, of course, in Atlanta we are conducting studies on all three types of encephalitis and means of transmission.

Mr. FOGARTY. During the Northeastern outbreak a few years ago, four or five deaths occured. The newspapers and everybody got excited and thought it was going to spread. The Public Health Service sent people into the area to help. But we don't seem to do a great deal of research on it. I am trying to draw some comparison between that and the funds we are spending on research in heart, cancer, mental health, and those fields.

Dr. GODDARD. It is difficult, of course, to draw comparisons that are acceptable to everyone in the field——

Mr. FOGARTY. I happen to be for both.

Dr. GODDARD. I am, too.

In this particular field I think the reason for so much public outcry and concern is because there actually is no treatment for encephalitis, so when it spills over from the animal population or birds into humans and we begin to have cases, there is great concern. The physicians who treat these cases can only provide supportive therapy.

We hope there will be development of some type of protection against this in case of an epidemic.

We feel the continuation of our work in encephalitis through field studies, delineation of the modes of transmission, how the disease perpetuates itself, is important, because the potential threat is always there.

Mr. FOGARTY. What are some of the other more serious diseases that affect human beings that you are working on?

Dr. **Goddard.** A number of viral diseases are of great significance. Hepatitis continues to be a major national health problem in terms of——

COOPERATION WITH INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

Mr. **Fogarty.** When you are talking about viral diseases, do you work in cooperation with the Institute of Allergy and Infectious Diseases?

Dr. **Goddard.** Yes, indeed. I might give one example of the type of cooperation that exists.

The Greeley field station of CDC meets each year with the Rocky Mount Laboratory of NIAID and reviews what each one's activities will be for the coming year. This is to assure that there is no unnecessary duplication, and also to make certain that they take advantage of each other's field studies and laboratory studies so that, by small additions, more information can be gained at relatively little cost.

So I would say we are working in close harmony with Dr. Andrews and his Institute.

Mr. **Fogarty.** Tell us about some of these virus problems.

HEPATITIS

Dr. **Goddard.** Hepatitis, of course, is one of the major problems.

Mr. **Fogarty.** That is growing in incidence, too, is it not?

Dr. **Goddard.** Yes. The last 4 or 5 years we have had an upswing. The peak was reached in 1961 when we had some 72,000 cases. This past year I am happy to say it dropped off to approximately 51,000 cases. Of course, we must recognize this is a cyclical type of disease where the incidence varies over a period of years.

The most distressing thing about the disease, apart from the long time it lays the individual up and the potential permanent damage that can be done to the liver, from our point of view is the fact that we have not been able to recover the virus or viruses that are the causative factors. This handicaps us greatly in not being able to work out methods of prevention or development of vaccines. Much of our effort in the field of viral diseases this coming year will be concentrated on infectious hepatitis.

Other viral diseases which involve the gastro-intestinal system will continue to receive our attention. The total number of deaths per year from viral diseases of these types, including hepatitis, is around 10,000. So we are dealing with an important health problem. We study some of these diseases in our Phoenix, Ariz., field station. Some progress is being made here but field studies of this type are not easily carried out and require time for completion.

UPPER RESPIRATORY DISEASES

Mr. **Fogarty.** What about the upper respiratory diseases, are you doing anything in that field?

Dr. **Goddard.** Yes, sir, in our Kansas City field station, as well as in the Atlanta headquarters, we are carrying out studies of histoplasmosis, and viral upper respiratory diseases.

Mr. FOGARTY. It seems to me that we hear more about that problem this year than we have ever heard.

Dr. GODDARD. Yes. Influenza, particularly Asian influenza, has been a significant problem this year. Early last fall the Surgeon General did post a warning to the Nation that this coming winter might indeed be a difficult one from the standpoint of influenza. We have had an excess of 5,000 deaths since January 1 due to influenza and pneumonia-like diseases, and these mainly occurred in people 45 years of age and over. We feel that many of these deaths could be prevented with the vaccines that we have available, if we, in combination with the States and the local health departments and the practicing physicians, do a good job.

INFLUENZA VACCINE

In a 3-year period alone, 1959 through 1961, there were over 100,000 deaths due to influenza. We feel many of these deaths could have been prevented had there been good use of the vaccine.

Mr. FOGARTY. What do you mean "good use"?

Dr. GODDARD. That those persons past 45 years of age and individuals who have a chronic respiratory disability or chronic cardiac disability receive early in the fall the immunizations needed against the strains that are predicted to be prevalent that winter. We feel that this would protect them.

Mr. FOGARTY. Of course, there are many strains; are there not?

Dr. GODDARD. There are a fair number of strains.

Mr. FOGARTY. You cannot just take a shot or something in sugar and prevent all influenza?

Dr. GODDARD. Not yet, unfortunately. But the vaccines that have been developed are adjusted each year by maintaining contact with what goes on abroad through exchange of information with our counterparts in Great Britain, Japan, throughout the world, in fact. We are almost able to predict what strains of influenza virus will cause difficulty throughout each year.

Mr. FOGARTY. That is what happened this year?

Dr. GODDARD. Yes, sir.

Mr. FOGARTY. Two or three years ago you were able to predict a similar outbreak.

Dr. GODDARD. That is correct.

Mr. FOGARTY. What can be done to prevent influenza? What are some of the suggestions you have?

Dr. GODDARD. I would say the most significant suggestion would be the intelligent and more widespread usage of the available vaccines in the fall.

DIFFICULTY OF ERADICATING INFLUENZA

Mr. FOGARTY. We are going to spend $5 million to start a program trying to eradicate the *Aedes aegypti* mosquito. Why don't we do something to try to stamp out influenza?

Dr. GODDARD. I would say we are trying. I don't know if one can discuss the eradication of influenza because, as you have pointed out, a great variability of strains does occur. But we are working with the entire medical profession, the practicing physician, State health departments and local health departments, in the promotion of better utilization of the vaccine to cut down on the number of cases.

Mr. Fogarty. You have been able to practically eliminate typhoid fever in this country; have you not?

Dr. Goddard. Cases of typhoid fever are still reported each year in this country, but for practical purposes it has been brought under good control. With typhoid fever we are dealing with a fairly fixed strain of bacteria; one that doesn't show the variability of influenza virus, and too, the mode of transmission is different.

In influenza there is the person-to-person contact in theaters, airplanes, eating places, across the table in conferences; it is much harder to reduce the spread.

Mr. Fogarty. Are you doing any work on the common cold?

Dr. Goddard. No, sir, most of the work on the common cold is being carried out at the National Institute of Allergy and Infectious Diseases.

APPROPRIATION TRANSFERS

Mr. Fogarty. I asked you originally about the type of activities being transferred. Are these activities now carried out by you under allocation of funds or are they being performed by the divisions to which the funds had previously been appropriated?

Dr. Goddard. They are being—if I understand you correctly, sir—carried out by the Communicable Disease Center, which is one of the divisions of the Bureau of State Services.

Mr. Hambleton. The research grants are still being carried out by the National Institutes of Health, this year, in 1963. They will be transferred down to the Communicable Disease Center next July.

Mr. Kelly. There is one other item of transfer that is reflected in the budget tables, Mr. Chairman. That is the transfer to this appropriation from the appropriation "Control of tuberculosis" and from the appropriation "Control of venereal diseases." This is not related to the research grant program being transferred from NIH but rather reflects a decision that we were putting these funds, together with substantial funds from the Communicable Disease Center, into a management fund. The Communicable Disease Center's activities and appropriations represent such an overwhelming amount of the work actually done in management operation, in Atlanta, that all of the management costs and research services should be treated as a part of this appropriation. This would provide for a much clearer presentation to the committee.

Mr. Fogarty. Why don't you transfer all activities in TB and VD down to Atlanta?

Mr. Kelly. The program direction has been moved to Atlanta for both programs but we have maintained a separate appropriation for them at the request of this committee.

Mr. Fogarty. But you are not going to justify those appropriations, are you?

Dr. Goddard. No, sir, I am not. Dr. Bloomquist and Dr. Brown are going to be here for the hearings on those appropriations.

APPROPRIATION LANGUAGE CHANGE

Mr. FOGARTY. You have a change in language to provide that $10,205,000 remain available until June 30, 1965. Will you place in the record the pertinent citation and quotations from the law authorizing this?

Dr. GODDARD. Yes, sir.

(The information follows:)

Public Law 87–868, the Vaccination Assistance Act of 1962, amends section 2, part B of title III of the Public Health Service Act by adding section 317. Section 317(a) states:

"There are hereby authorized to be appropriated $14,000,000 for the fiscal year ending June 30, 1963, and $11,000,000 each for the fiscal years ending June 30, 1964, and June 30, 1965, to enable the Surgeon General to make grants to States and, with the approval of the State health authority, to political subdivisions or instrumentalities of the States under this section. Amounts appropriated pursuant to this section for the fiscal years ending June 30, 1963, and June 30, 1964, shall be available for making such grants during the fiscal year for which appropriated and the succeeding fiscal year * * *."

SUPPLEMENTAL REQUEST FOR VACCINATION PROGRAM FOR YOUNG CHILDREN

Mr. FOGARTY. What is the status of your supplemental request?

Dr. GODDARD. We have not had hearings on this request as yet. The appropriate budgetary material has been transmitted through the Bureau of the Budget and the executive department to Congress.

Mr. KELLY. The President has requested that we submit our supplemental request to him.

Dr. GODDARD. This is the vaccination program and the first year is something in the magnitude of $12 million.

Mr. FOGARTY. What vaccination is that?

SCOPE OF PROBLEM

Dr. GODDARD. In our population of children under 5 years of age, of which there are some 20 million, only 6 million of these children are completely immunized against the four most common diseases for which we have adequate protective measures—polio, diphtheria, whooping cough, and tetanus. Now this means that there are approximately 14 million children who do not have protection against these preventable diseases. Last year alone there were 13,452 cases of these four diseases reported to the Communicable Disease Center, and this, in all likelihood, means that there were additional cases which we did not hear about.

In addition, there were approximately 500 deaths, the majority of them occurring in children.

Now these diseases are classified as preventable. The problem is to get the communities, the physicians, the health agencies, working together to get the immunizations into the children under 5 years of age and to raise the level of community protection so that these diseases can be dropped to their minimal possible level.

In fact, some of them we hope will almost disappear from the scene over the next 3 or 4 years in this country.

So, through the provision of funds to the States in the form of grants for community programs to provide vaccines for children under 5 years of age, these diseases which are preventable can be reduced to a minimum level in the next few years.

POLIO VACCINATIONS IN RHODE ISLAND

Mr. FOGARTY. My State just last Sunday put on a drive for the Sabin-type vaccination for polio. I understand it was the first statewide vaccination program in the nation. Were they given a grant?

Dr. GODDARD. No, sir.

Mr. FOGARTY. I know the medical society and State health department worked together in arranging this program for all people, all ages.

Dr. GODDARD. No grants, of course, have been made to any States as yet because we have no funds for these purposes.

Mr. FOGARTY. I think 70 percent showed up. Is that considered pretty good? Seventy percent of the population of Rhode Island went to these stations and received this type vaccine, for polio, last Sunday.

MOTIVATING PEOPLE TO TAKE VACCINE

Dr. GODDARD. This would be considered a fairly good percentage of the population.

Now what we and everyone in the health fields must be concerned about is how do you get the other 30 percent. Because unless we are successful in doing that, we are going to maintain a reservoir of susceptible people throughout the United States and the disease can be perpetuated in that susceptible reservoir. These are most difficult to reach and will require an intensive activity on the part of the local health department and practicing physicians.

Mr. FOGARTY. That is the same problem you have with TB, practically, isn't it? Finding the people?

Dr. GODDARD. Not so much finding these individuals. We have techniques now available to us in this particular field that work rather well and enable us to define the susceptible part of the community. But the problem is to motivate them, move them, get them to come in to take advantage of the vaccine. And of course portions of the enabling legislation do provide that portions of these moneys may be used for those purposes as well as for the purchase of the vaccine.

Mr. FOGARTY. In this project in Rhode Island, everyone was asked to donate a quarter. Those who couldn't afford it, of course, didn't pay at all.

Dr. CHRISTENSEN. Mr. Chairman, I would like to point out that the act Dr. Goddard described also provides and urges the immunization against diphtheria, tetanus, and whooping cough.

Now, polio is a disease to which the people respond very rapidly and when there is a vaccination program against polio there is not too great trouble in getting out a large response. But when you get to diseases like diphtheria, whooping cough, and tetanus, the public does not respond so readily.

The latest figures that have been developed by the Bureau of the Census show that only about 30 percent of the children under 5 have received their immunizations against diphtheria, whooping cough, and tetanus.

Dr. GODDARD. I personally feel we shouldn't have a single case of these diseases in this country today.

AGE WHEN CHILDREN CAN BE IMMUNIZED

Mr. FOGARTY. Is it possible to do this when the child is still in the hospital, before the child leaves the hospital?

Dr. GODDARD. I wish it were possible. This would be ideal because of the high percentage of children now born in hospitals, something, I think, approaching 98 percent. However, there are still sufficient maternal antibodies present in the infant's blood at the time they are discharged from the hospital that you would get interference with the formation of antibodies that normally are produced when you use a vaccine, such as the triple vaccine against diphtheria, whooping cough, and tetanus. This means you must wait until the child is approximately 9 or 10 months of age before you can immunize him.

Mr. FOGARTY. I see. By that time generally the child is not in need of a pediatrician's services?

Dr. GODDARD. I am sure most pediatricians, and in fact all of us in the public health field, agree that children up through 1 year of age require fairly frequent visits to the pediatrician or family doctor.

ROLE OF PEDIATRICIANS

Mr. FOGARTY. I should have said that most are not getting such services.

What have the pediatricians done about this?

Dr. GODDARD. We have been working with the American Academy of Pediatrics on this matter of the vaccination assistance program in order to inform them what the plans are. They have also indicated their willingness to participate and cooperate in the activity. They are very much in favor of it.

Mr. FOGARTY. They are in favor of it but I have not read where they have done much about it.

Dr. CHRISTENSEN. Mr. Fogarty, they work, I think, very carefully and hard and have promoted a fair amount of immunization. But I think we have to remember that the people they handle are the type of people that you ordinarily would expect to have their immunizations. And the hard-to-get part drop out from pediatric care long before this time.

Dr. GODDARD. Or never get to it.

Mr. FOGARTY. Lower socioeconomic groups?

Dr. CHRISTENSEN. Yes, sir.

Mr. FOGARTY. Especially in the cities; is that right?

Dr. GODDARD. That is true.

PROPOSED REQUIREMENT OF COMMUNITY IMMUNIZATION PROGRAM

Dr. CHRISTENSEN. There is one other nice thing about this act that Dr. Goddard will administer. He plans on having as one of the requirements that the communities will carry on this base-type immunization. In other words, the type of immunization that occurs up to 1 year of age. And this will be one of the requirements of the project in order to be approved.

Mr. FOGARTY. What about the first year in school?

Dr. GODDARD. We are talking about under 5 in this program in an effort to eliminate the diseases which now seem to be largely centered in that group.

Mr. FOGARTY. Yes.

Dr. GODDARD. The plan, as Dr. Christensen indicates, will require that the communities continue this type of program after the grant support has been terminated.

Mr. FOGARTY. Is it mandatory on the part of the parents to have these children vaccinated before they enter school?

Dr. GODDARD. In many States it is required as a prerequisite to school entrance.

Mr. FOGARTY. Some States it is not?

Dr. GODDARD. In some States it is not; sir.

Mr. FOGARTY. I would think the States would take more initiative on it.

EFFECTS FROM DELAYING PROGRAM

Now, if you do not get this supplemental, what effect would that have on your request for 1964?

Dr. GODDARD. It would have no effect on our request for 1964 in the sense we have the job to do; the total cost of the job will remain about the same whether or not we use supplemental 1963 funds or use the money appropriated in July, fiscal 1964. It will mean we are delayed in time and may have to request an additional extension of authority beyond the June 30, 1965, deadline which the enabling legislation now provides.

Mr. FOGARTY. Well, the delay might cause quite a few deaths, couldn't it, if this program is not promptly initiated?

Dr. GODDARD. Yes; there are approximately 500 deaths due to these 4 diseases, every one of them in our opinion, preventable, every year.

Mr. FOGARTY. Were most of these deaths in these so-called slum areas in the larger cities? Or do you know?

Dr. GODDARD. I could provide, if you wish, sir, what information we now have.

(The information follows:)

DEATHS OCCURRING FROM DIPHTHERIA, PERTUSSIA, AND TETANUS

Vital statistics records do not provide information on the socioeconomic status of people dying of these diseases. However, 41 percent of these deaths occurred in residents of urban areas.

Dr. GODDARD. My suspicion would be that that is where the majority of them are concentrated. Because this seems to be, from our surveys and studies, where the majority of the individuals under 5 years of age have not received protection. So it is only logical that the two might go together.

CHILDREN'S BUREAU VACCINATION PROGRAM

Mr. FOGARTY. Does the Children's Bureau have a similar program on a smaller scale?

Dr. GODDARD. My understanding is the Children's Bureau provides funds for an immunization program of children of school age. This program, therefore, complements and supplements the program they now operate.

Mr. Fogarty. Their program would supplement yours?

Dr. Goddard. Either way.

Mr. Fogarty. You are trying to get them before 5 years of age?

Dr. Goddard. Yes, sir. Of course, the child must receive booster shots periodically and this, of course, is done at the time they enter school, and in the early years of school.

Dr. Christensen. There is a 3-year limitation, as far as the Immunization Act is concerned and it is an impact program in which we hope to pick up all of the backlog. We hope after this time the ordinary processes available to the community will be able to carry on the program.

This was worked out very carefully with the Children's Bureau at the time the legislation was developed and they are in complete accord with the purpose and the objectives of the individual program.

Mr. Fogarty. Do you think they would carry on the program?

Dr. Christensen. We certainly hope so. As I mentioned, one of the requirements for the projects will be the development of a plan to continue immunizing the babies as they are being born, up to 1 year of age.

COMMUNITIES TO PROVIDE PERSONNEL AND FACILITIES

Mr. Fogarty. Are there any matching requirements in the enabling legislation?

Dr. Christensen. Enabling legislation for the Immunization Act?

Mr. Fogarty. Yes.

Dr. Christensen. No, sir; there will be no matching requirements, but we will expect the communities to provide certain of the services——

Mr. Fogarty. Personnel and facilities?

Dr. Christensen. Physicians who would give the immunizations, and so forth.

Dr. Goddard. Yes. The personal services of the physicians who operate the clinics, and nurses and attendants at the clinics, the space actually used, will, in effect, be a matching provision—the communities and States will provide that.

Under the terms and conditions as we anticipate using them, we would provide the funds for the purchase of vaccine, for the development of programs aimed at stimulating people to take advantage of the program, for the actual cost of surveillance activities, laboratory work which is necessary to determine the level of immunization that has been reached.

Mr. Fogarty. You have several precedents over the past 10 or 15 years in similar stimulating programs, such as this, and I would guess you would gain by that experience, too, would you not?

Dr. Goddard. Yes; we have a fair amount of experience to fall back on. As Dr. Christensen has pointed out, we are most anxious that the programs, as they are developed by the States and by the political subdivisions of the State, heed very carefully this proviso that a continuing program shall be established and that immunization will be made available to all susceptible persons in the community regardless of age.

There is another part of the terms and conditions which one can view as a State contribution. That is for persons over 5 the State must provide funds for the purchase of vaccine for those individuals.

Aedes Aegypti Eradication Program

Mr. Fogarty. Now by far your largest increase is $5 million and 600 positions to start an *Aedes aegypti* mosquitoe eradication program.

We will put pages 143 to 146 in the record.

(The material follows:)

Aedes aegypti *eradication program*

1963 estimate	
1964 estimate	$5,000,000
Increase	+5,000,000

On October 13, 1961, the Directing Council of the Pan American Sanitary Bureau passed a resolution recommending that all member nations still infested with *Aedes aegypti* take steps to accomplish eradication of the mosquito by 1966. A similar resolution was passed by the Council on September 2, 1962. These actions were the culmination of more than a decade of concern in the Americas over the continuing threat of yellow fever. During that period, 13 countries and 3 territories achieved eradication. The United States, a party to the above resolution, constitutes a major source of possible reinfestation of Latin America. While this country has not initiated an eradication program, periodic surveys have been conducted to determine the density and distribution of *Aedes aegypti* in the United States, Puerto Rico, and the Virgin Islands. In addition, a pilot project to determine methodology and cost data for eradication of the species from a heavily infested urban area has been carried out in Pensacola, Fla.

To fulfill our international commitment as a member of the American nations—the Public Health Service has formulated a 5-year program to eradicate the *Aedes aegypti* mosquito from the United States, Puerto Rico, and the Virgin Islands, followed by a nominal surveillance program of 2 years. This plan has drawn heavily upon experience gained from operation of the pilot eradication project in Pensacola; knowledge of the operational and technical experiences encountered by Latin American countries in eradication effort, information from current status of the vector control activities of State and local departments of health; current knowledge of the distribution and density of *Aedes aegypti* infestation in the United States.

Further consideration in developing the program was knowledge of the elimination of *Aedes aegypti* in many areas of the United States during the past quarter century. Though the relative significance of many contributing factors which have brought about the decrease in the density and distribution of the species is not known, there is substantial evidence that the mosquito may no longer sustain or perpetuate itself when its population is reduced to a low level. Therefore, the eradication program will be initiated in cooperation with State and local departments of health in some 69 heavily infested metropolitan and transportation centers which constitute the greatest foci of *Aedes aegypti* and provide the greatest potential for dissemination of the species.

A further factor in initiating the program in the populated centers is the potential for obtaining assistance and participation of governmental agencies, voluntary organizations and individual citizens in the program, since numerous environmental deficiencies will be eliminated in the program of source reduction and eradication. The program will be integrated with State, county, and municipal programs in order to utilize existing surveys, facilities and equipment, and to procure supplemental manpower. Concerted effort during the first 2 years of the program to reduce the species to a very low level should result in spontaneous eradication over the winter months and preclude necessity of repeated insepction in many areas. As the program continues, personnel and equipment from these programs, together with assistance from State, local, and voluntary agencies will be utilized in extending eradication activities to contiguous infested areas.

An amount of $5 million is requested to initiate a program for eradication of the *Aedes aegypti* mosquito in the United States. Tentative estimates indicate that the total cost from all sources, Federal State, local, and voluntary, might be as much as $90 million. However, every effort will be made to find ways of reducing the amount of Public Health Service expenditures to an absolute minimum and to secure the maximum degree of participation from non-Federal sources. An intensive promotion and public information program will be conducted throughout the duration of the program to obtain the maximum cooperation, assistance, and participation of governmental agencies, voluntary organizations, and citizen participation in the source reduction and eradication program. Current budgetary projections contemplate a Public Health Service investment of $45 million during the 5-year period. Wherever possible, major items of equipment such as automobiles, power sprayers, and trucks will be obtained from surplus property, participating agencies, or will be leased. A reappraisal and critical analysis of budget needs will be made following the first year of operation.

In 1964 cadre personnel will be recruited and trained for each of the State programs and a portion of the basic supply material and equipment will be procured, and, in some cases, leased. Contracts will be negotiated with the respective State departments of health to permit their employing some permanent and temporary personnel that will be required to conduct the operational activities in local areas.

A total of 600 permanent Public Health Service employees will be employed during the first year, the majority of whom will be assigned to State and local programs to administer and supervise the eradication effort. Operations will be started in areas having a prolonged breeding season. In addition, a vigorous public information education program will be initiated.

The overall program will emphasize the necessity of obtaining total community participation in the conduct of intensive cleanup and source reduction programs to facilitate the following operations phases: (1) surveys during the breeding season by trained inspectors to determine infestations; (2) spraying of infested and adjacent areas with DDT followed by inspections and treatments until eradication is achieved; (3) research to maintain a constant check on the susceptibility of *Aedes aegypti* to DDT and to investigate alternative procedures of control; (4) establishment of a regulation to prevent indiscriminate dispersal of *Aedes aegypti*; (5) public information activities to obtain cooperation of local governments and property owners in the elimination of mosquito-production sources; and (6) continued surveillance in eradicated areas to assure prevention of reinfestation. It is hoped that only a limited program of surveillance will be required in 1969 and 1970.

The requested funds will provide $2,007,500 for staff and related costs; $1,230,000 for contractual services, including contracts with States for employing temporary personnel; $297,500 for supplies and materials (including $202,500 for DDT); and $1,456,000 for items of equipment such as sprayers, trucks, sedans, mixing plants, and microscopes. Insofar as they are available, major items of equipment will be leased. The budget includes funds for the purchase of 22 passenger vehicles for which special authority is required.

The Public Health Service costs for the eradication program are estimated as follows:

1964	$5, 000, 000
1965	10, 000, 000
1966	12, 000, 000
1967	10, 000, 000
1968	8, 000, 000

This distribution for 1965 through 1968 will be reevaluated following annual reviews of the total program and analysis of non-Federal participation.

Mr. FOGARTY. Now you estimate it will cost $45 million between 1964 and 1968 to complete the job. Is that just a guess or do you have some good basis for that figure?

AREAS WHERE CONTROL IS NEEDED

Dr. GODDARD. This is based on the experience that we gained in carrying out the Pensacola project, which was a demonstration project on a small scale, and a projection from that experience, plus knowledge of the general areas in which the *Aedes aegypti* mosquito is now prevalent. As has been indicated, there are approximately 69 major areas in the 9 States, Puerto Rico, and the Virgin Islands we would attack on a communitywide basis.

Mr. FOGARTY. What are the nine States?

Dr. GODDARD. Texas, Louisiana, Mississippi, Arkansas, Georgia, Alabama, Florida, South Carolina, and Tennessee.

Mr. FOGARTY. Because of environment?

Dr. GODDARD. Yes, sir; environment is certainly a factor and it has been noted over the past couple of decades there has been actually a decrease in the *Aedes aegypti* population in certain areas. And here we think that hard winters may contribute to the killing off of the *aegypti* mosquito. So that environment does play a role. We hope to take advantage of this by timing our programs so that we can get the maximum killoff through the summer months, reduce the mosquito population to a level below which we hope it cannot sustain itself. This is particularly significant in those areas where you have frost and colder weather

LATIN AMERICAN COUNTRIES WITH SUCCESSFUL ERADICATION

Mr. FOGARTY. What Latin American countries have eradicated it and what ones still have not?

Dr. GODDARD. I can't, from memory, give you that information.

Mr. FOGARTY. Are there any?

Dr. GODDARD. There are approximately 16 Latin American countries that have eradicated *A. aegypti* and my recollection is that 11 countries report absence of *aegypti* but have not yet been certified as free and 13 countries that report *A. aegypti* programs in progress.

Mr. FOGARTY. Would you supply that for the record?

Dr. GODDARD. Yes, sir; I will be happy to.

(The information follows)

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THE ELIMINATION OF URBAN YELLOW FEVER IN THE AMERICAS THROUGH THE ERADICATION OF "*Aedes Aegypti*"

(Fred L. Soper, M.D., Dr. P.H., F.A.P.H.A.)

This is the story of the developing program for the eradication of *Aedes aegypti* in the Americas. The threat of urban yellow fever has been almost entirely eliminated. For complete elimination, the cooperation and effort of the United States is needed.

"*Aedes aegypti*" SITUATION IN THE AMERICAS, JUNE 1961

In consideration of the international nature of the eradication effort and of the stake each country has in knowing the results of eradication efforts in other countries, the Pan American Sanitary Bureau some years ago drew up standards for the evaluation and final confirmation of *A. aegypti* eradication. The bureau makes terminal surveys and certifies eradication on the basis of these standards. The roll call of countries certified free of *A. aegypti* as of October 1961 follows (see map 1, p. 8):

Bolivia
Chile
Ecuador
Guatemala
Nicaragua
Paraguay
Uruguay
French Guiana
Brazil
Costa Rica
El Salvador
Honduras
Panama
Peru
Canal Zone
British Honduras

The countries and localities reporting absence of *A. aegypti* but not yet surveyed and certified include:

Antigua
Aruba
Buenos Aires
Bermuda
Montserrat
Trinidad
Colombia[1]
British Guiana[1]
Granada
Tobago
San Vicente

The countries reporting eradication programs in progress are:

Argentina[2]
Guadeloupe
Mexico[2]
San Cristobal
Santa Lucia
Barbados
Cuba
Jamaica
Dominican Republic
Curaçao
Commonwealth of Puerto Rico
Virgin Islands
Venezuela

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[1] Colombia, long free of *A. aegypti,* suffered reinfestation of the border city of Cúcuta just before certification in 1961; Georgetown, British Guiana, after several years without *A. aegypti,* was reinfested in 1962.

[2] As of Dec. 10, 1962, no evidence of *A. aegypti* has been found during 1962 in Mexico and Argentina. *A. aegypti* on the mainland of the Americas is now apparently limited to the northern fringe of South America (Cúcuta (Colombia), Venezuela, British Guiana, Surinam) and to the United States.

YELLOW FEVER IN UNITED STATES

Mr. Fogarty. How long has it been since we have had a case of yellow fever in this country?

Dr. Goddard. I believe the last outbreak of yellow fever we had in this country was 1907 when we had an epidemic. Is that right, Dr. Donaldson?

Dr. Donaldson. I am not sure.

Dr. Goddard. We had an epidemic in 1907.

Mr. Fogarty. But it has been moving up from South America, Central America, and Mexico; hasn't it? It has been coming north?

Dr. Goddard. Yellow fever cases have been reported farther north in the last few years. There seems to have been a northerly progress of the disease. This has been largely in jungle yellow fever as opposed to the urban yellow fever which was such a great problem around the turn of the century and the first four decades of this century in some of the Latin American countries.

BENEFITS OF ERADICATION PROGRAM

Mr. Fogarty. Some people might say this is a lot of money to spend on a yellow fever program when we have had so few cases reported in this country. What is the best answer to that?

Dr. Goddard. I think the best answer to that, sir, would be that through this type of program we will gain benefits that at first aren't apparent. By that I mean that we will incorporate this activity into a general sanitation program in the communities.

Now let's take, for example, the St. Petersburg area where we did have the encephalitis outbreak last fall. The *Aedes aegypti* mosquito habitat is comparable to that of the *Culex Nigripalpus.* Therefore, the program aimed at eradicating the *Aedes aegypti* will also knock out the *Culex Nigripalpus* and help prevent further occurrence of encephalitis in that particular area.

I think we will gain in terms of improvement in general sanitation in all of the communities where this program is to be carried out. We have noted in the past there is a decrease in gastrointestinal diseases where good sanitation exists, so one would expect this as a side effect, too.

Mr. FOGARTY. What will be the bad effects if we do not do something like this?

Dr. GODDARD. I think one of the very bad effects is the breaking of faith with our Latin American neighbors. They have devoted much of their scarce resources to the eradication programs in their countries. We, over a number of years, have agreed to carry out this program, and have not. They now feel that their countries are being reinfested by *Aedes aegypti* mosquitoes coming from our ports into their ports, and expect us to act.

Mr. FOGARTY. I see.

Dr. GODDARD. I feel this would be a very deleterious effect.

Mr. FOGARTY. You have an increase——

Did you want to say something?

COST OF PROGRAM

Dr. CHRISTENSEN. Mr. Chairman, I would like to mention this program is for a 5-year period with a total cost estimated to be $45 million. However, this estimate was worked up very carefully and at the same time it anticipated using all of the resources that are available in the community and the State and other governmental agencies, if we can.

The total cost of the program to a great extent will depend upon how much cooperation we can get from the local communities and the States. We are working very hard in trying to get as much cooperation as we can to hold down the cost of the program because it is an expensive program, but at the same time it is a tremendous threat in view of the fact the yellow fever is transmitted by the *Aedes aegypti* mosquito.

National Laboratory Improvement

Mr. FOGARTY. You have an increase of $953,000 and 75 positions for "National laboratory improvement and reference services," which is about a two-thirds increase in this activity.

Dr. GODDARD. Yes, sir.

Mr. FOGARTY. Your justifications are not very specific. Just what is planned and why is this increase necessary?

Dr. GODDARD. There are a number of important activities that will be carried out with what I would term the effective program increase of $707,000. First will be training in new and improved laboratory techniques. Our medical research programs have produced new methods and techniques at an astonishing rate. Our laboratories have not in general kept pace with these developments, and yet today more than ever before, accuracy and dependability in laboratory work is critical to good patient care and good community programs for prevention of disease.

I might give you one example of the extent and seriousness of this problem today. We sent our serum specimens to 43 State laboratories for a simple serologic test. Only 25 obtained results within an acceptable range. These 43 laboratories used 16 different antigens and 9 time-temperature variations for incubation.

This is but one simple illustration of the complexity of the problem and the need for improving our laboratory work at the State and the community levels.

The practicing physician today is more dependent than ever before upon having good, accurate, and reliable laboratory work available to him. He expects it and we think he should have it. So by providing these moneys, we will initiate a training program to upgrade the quality of work that is being carried out in the State laboratories.

Mr. FOGARTY. You know there used to be some Members, and probably still are some, who felt that Congress spending x millions of dollars building research facilities and training scientists and all of this was a waste of money because some fellow in an attic somewhere might come up with the answer.

Dr. GODDARD. My only comment there would be, sir, that this is indeed a rare chance event today. Research, which this is not an example of, requires highly technical tools and good laboratories to be carried out properly and bring forth results.

Mr. FOGARTY. I happen to agree with you.

Dr. GODDARD. Secondly, we will carry out a State and local laboratory evaluation program. This actually would be a first step in the development of an adequate training program; to send teams out to sit down with the laboratory directors, their key personnel, and review very carefully the types of activities they are carrying out, how they are being done and what they view as their major problems.

Today we are confronted with a situation where almost daily there are new viral diseases being described or discovered. That is an overstatement of the fact, but it is true that we have now knowledge of many more diseases, and tests have been developed to help identify the presence of these diseases within the individual patient, so we have increased the complexity of the work.

Now, through these evaluations, we can find out what the laboratory needs are for training their top personnel, and for their line technicians. We can then organize a training program directed at these needs and carry it out, both on a centralized basis for the highly technical group and on a regional basis for the line technicians.

STANDARDIZATION OF REAGENTS

Now, the third would be the standardization of reagents. This is a particularly difficult problem. The illustration we use——

Mr. FOGARTY. The what?

Dr. GODDARD. Standardization of reagents, the materials used in the laboratory to actually carry out the specific test.

There is great variability in the production of these reagents, how they are handled, how they are shipped, how they are stored. The laboratories need to know what is the optimum shelf life; how long can I safely use this and expect to get the right answer when I get this in the test tube along with this.

They also need to have available to them standards indicating when you should make up a specific reagent to carry out a test; what are the precise quantities, what are the exact types of materials that should be used.

Therefore much of our work in this program will be directed toward development of standards.

As I mentioned in this one check that was run, nine different time-temperature variations were used for the same simple serologic test. Here through our activities we can establish an optimum way to do these tests to obtain the best results.

The State laboratories and the national groups of pathologists involved are interested and anxious to have us carry out this activity.

OCCURRENCE OF EPIDEMICS

Mr. FOGARTY. Will you place in the record what epidemics you have been called on to assist in the last year and where they were?

Dr. GODDARD. Yes, sir. I will be glad to.

(The data follow:)

EPIDEMICS 1962

July 1961:
    Human rabies: Powell County, Ky.
    Aseptic meningitis syndrome: Rhode Island.
    Flood disaster aid—typhoid and tetanus immunizations: Charleston, W. Va.
    Plague: Santa Fe, N. Mex.
    Hepatitis: Hoona, Alaska.
August 1961:
    Gastroenteritis: Cincinnati, Ohio.
    Acute febrile illness: Fort Dodge, Iowa.
    Typhoid fever and shigellosis: North Dakota and South Dakota.
    Acute central nervous system infection: North Dakota.
    Coxsackie B–5 pericarditis: New Jersey.
September 1961: Neuromyasthenia: New Orleans, La.
October 1961:
    Poliomyelitis: Newberry, S.C.
    Poliomyelitis: Windsor County, Vt., and Sullivan County, N.H.
November 1961:
    Bacillary dysentery: Omaha, Nebr.
    Encephalitis: Florida.
    Influenza: Hopi Indian Reservation, Ariz.
    Poliomyelitis: Santiago, Chile.
    Typhoid fever: Phenix City, Ala.
December 1961:
    Obscure gastrointestinal infections: Indiana.
    Staphylococcal skin infections: North Carolina.
    Hepatitis: Jacksonville, Fla.
    Shigella: Portland, Oreg.
    Influenza: Missouri.
    Acute conjunctivitis: Phoenix, Ariz., and Coachella Valley, Calif.
January 1962:
    Diphtheria: Omaha, Nebr.
    Acute respiratory disease: Hazleton, Iowa.
    Cryptococcus meningitis: Wilmington, Del.
    Streptococcal infections: Lindsay, Nebr.
    Gastroenteritis and respiratory epidemic: Vernon, N.J.
    Hepatitis: Iowa, Mo., and south Georgia.
February 1962: Diphtheria: Ketchikan, Alaska.
March 1962
    Cholera: Philippine Islands.
    Leukemia: Chicago, Ill.
    Animal rabies outbreak: Indiana.
    Encephalitis: Tucson, Ariz.

April 1962:
- Hepatitis: Rison, Ark., and Sussex, N.J.
- Erythemia infectiosum: Port Angeles, Wash., and Dow City, Iowa.
- Salmonella: Minneapolis, Minn.
- Tularemia in mink and humans: Woodruff, Wis.

May 1962:
- Staphylococcal infection: Louisiana.
- Hepatitis: Kaplan, La.
- Psittacosis: Illinois.
- Poliomyelitis: San Antonio, Tex.

June 1962:
- Influenza and measles: American Samoa.
- Enteritis: San Pedro Sulla, Honduras.
- Unusual syndrome in premature nursery: Philadelphia, Pa.
- Histoplasmosis: Hobbs, N. Mex.
- Insect bites: Spartanburg, S.C.

SCHISTOSOMIASIS CONTROL

Mr. FOGARTY. Some of our committee members went to Puerto Rico this year and were there 2 years ago. On both occasions we have taken the time to visit Dr. Furgeson, and we were impressed with the work he has been doing in the field of schistosomiasis.

Dr. GODDARD. Yes, sir.

Mr. FOGARTY. He told us 2 years ago that on one little island off the island of Puerto Rico, they were able to go in and concentrate there and eliminate the snail that carries this disease.

I have forgotten the name of the island.

Dr. DONALDSON. Vieques.

Mr. FOGARTY. Vieques. We have been talking about our relations with South America, and in the northeastern section of Brazil this disease is one of the most prevalent they have. He thought that if we spent a little more effort on this, that we could help areas and countries like that.

Also we talked to Dr. Arbona, the Commonwealth's health officer. I received a letter from him dated February 20.

He would like to see a real control program to eradicate it in Puerto Rico.

He also spoke of the countries that need help—Brazil, Venezuela, Colombia, Surinam, French Guiana, Dominican Republic, Guadeloupe, St. Martin, Montserrat, St. Kitts, and so forth. He also says that the Veterans' Administration, the U.S. Navy, and the U.S. Army have strong interests in bilharzia control in these areas.

He said:

> We have attempted to describe the project needs and a reasonable plan for the control of schistosomiasis within a reasonable time limit. Our estimate is for an average annual expenditure of $600,000 for 5 years.

He does not say anything about the Commonwealth Government matching these funds, in this letter. He says:

> The Commonwealth Government has been spending around $85,000 a year in its limited control program, which up to now has been limited because of other needs of even higher priority—

in the health areas I assume.

So we thought, I did at least, that if we could do such a good job in this island off the island of Puerto Rico, why has there not been some attempt to take the island of Puerto Rico itself and eradicate it.

DEVELOPMENT OF CONTROL METHODS

Dr. GODDARD. I would say, Mr. Chairman, we are almost at a point in time where this would be feasible. In recent years, much of our work in cooperation with the Department of Public Health in Puerto Rico has been directed toward an evaluation of several methods of controlling the snail involved in the transmission of schistosomiasis.

We have introduced the usage of a predator snail, the Marisa snail, which actually kills and eliminates the Austrolarbis snail, which is the snail that is causing the difficulty in terms of infecting humans. We have also been evaluating the efficacy of changes in irrigation practices; the use of chemicals and the use of herbicides to destroy the vegetation that the snail must live on. So up to this point in time, much of our effort, and theirs, too, has been aimed at the evaluation of the efficacy of these methods.

We are now, I feel, almost at that point in time where a method could be selected and a wider-scale program could be initiated.

Mr. FOGARTY. You are not ready, though, to select that particular method?

If you are not, when will you be? Or do you know?

Dr. GODDARD. I would say within a year we would feel confident in the selection of a method. The study of a predator or competitive snail, the Marisa, is moving along nicely and the most recent report I had from certain areas where the Marisa was introduced was that these streams were still free of the Austrolarbis snail.

It may well be that in the final analysis that one will have to use a combination of these methods, rather than a single method, to attack the problem.

DETECTION METHODS

You would be interested to know also that we are engaged right at this moment in the conduct of a skin test survey in the school population; 12,000 fifth-grade children are being skin tested to determine the prevalence rate of schistosomiasis in the various watershed areas in the island. This is a skin test developed by one of the Communicable Disease Center staff and we have every reason to believe it will be 85 or 90 percent effective in determining which individuals possess the infection.

Through this program, which will be completed, as I recall, early this summer, we would have a much better idea where the effort should be concentrated in terms of the elimination of the snail host.

Mr. FOGARTY. Information I have is 10 to 20 percent of the entire population is suffering from it.

Dr. GODDARD. Our estimates range from 10 to 30 percent of the rural population.

One of the problems is that in the past they have had to rely on the study of stool specimens to determine which individuals are infected, and there is a fair amount of variability in terms of the accuracy of this method. We think the skin test will be a more accurate means of determining the exact prevalence.

PROPOSED CONTROL PROGRAM IN PUERTO RICO

Mr. FOGARTY. I think Mr. Williamson had a proposed budget along with this letter, so we will put the whole thing in the record.

(The documents follow:)

COMMONWEALTH OF PUERTO RICO,
DEPARTMENT OF HEALTH,
OFFICE OF THE SECRETARY OF HEALTH,
San Juan, P.R., February 20, 1963.

Hon. JOHN F. FOGARTY,
House of Representatives, Washington, D.C.

DEAR MR. FOGARTY: I wish to express appreciation for your continuing interest in the health problems of Puerto Rico and for a recent exchange of views on the control of Bilharzia. As you know, Bilharzia is a bothersome and damaging disease for a great number of Puerto Ricans, and we estimate that 10 to 20 percent of us carry the infection at present. Bilharzia has been known in Puerto Rico since its discovery, in 1914, in Mayaguez. Since then a great variety of studies have been made upon it, and during the past 8 years our department of health, in cooperation with the U.S. Public Health Service, has conducted formal investigations on Bilharzia control in a series of six project areas. Accordingly, our knowledge of the epidemiology and the control has increased to a level of confidence in the methods which have been developed and we believe that with sufficient backing we can now organize a successful anti-Bilharzia program on an insular basis.

Our research information has been commonly shared during the past several years with many foreign technicians who have visited here for the purpose of strengthening their own Bilharzia control programs. We feel that the developments of a strong disease control program here would not only eliminate a hazard to good health, but would be of value to developing endemic areas in the field of international consultation and extension training. For example, in our own hemisphere certain areas under the aegis of the Alliance for Progress are much in need (Brazil, Venezuela, Columbia, Surinam, French Guiana, Dominican Republic, Guadalupe, St. Martin, Montserrat, St. Kitts, Nevis, Antigua, St. Lucia, Bartholomew, Martinique, and Dominica) of guidance in this subject. I should mention that the U.S. Veterans' Administration, the U.S. Navy, and the U.S. Army have strong interests in Bilharzia control for obvious reasons.

During your visits with us in the past 4 years you were informed that, although several points exist where the parasitic worm life cycle could be broken, a great disparity exists between relative values of these factors. Arbitrarily, at first, we choose to consider the value of improved soil sanitation by means of latrine installations, education on preventive measures, medical care, and vector snail destruction. Unfortunately, the weakest control factor remains chemotherapy, although much research continues in this field by large drug firms. Medication will not be incorporated in our program at present. The other practical factors can become integrated into a definitive control program, and of these, snail destruction is currently the most valuable. We have become proficient in snail control by the use of highly potent chemicals and we have learned to combine these techniques with biological snail control. In our plans, the disruption of the snail environment, by routine engineering drainage methods, stream channel rectification and cleaning, would also be featured. Only small streams, ponds, and swamps would receive periodic chemical treatment and in Puerto Rico there would be no problem with possible harm to fishing or other wildlife in such waters. The larger bodies of water—rivers, irrigation systems, and lakes—would be treated by biological means, primarily by use of the predator snail, Marisa. We also have a snail-eating fish which should be of value in certain environments.

We have produced a brief on a budgetary proposal for your consideration, which is attached. I am pleased to report that much of the information contained and the planning exhibited is the result of studies conducted at intervals by an interagency group, the Puerto Rican Committee for Bilharzia Control, which has been active for several years in stimulating and furthering coordination of investigations. We have attempted to describe the project needs and a feasible plan for the control of Bilharzia within a reasonable time limit. Our estimate is for an average annual expenditure of $600,000 for 5 years. We are looking forward to further discussions with you on this important subject and to furnishing your committee with any additional data required to present this program to the Congress in the most favorable manner.

The Commonwealth government has been spending around $85,000 a year in its limited control program, which up to now has been limited because of other needs of even higher priority and also because we had been in the process of refining the methodology. It is our feeling that with the methods that have been developed and tested, an islandwide control program is justified. Your assistance in establishing this program which may be of great value to the people of Puerto Rico and also to the people of the area of the island where Bilharzia is endemic, will be most sincerely appreciated.

Respectfully yours,

GUILLERMO ARBONA, M.D.,
Secretary of Health.

COMMONWEALTH OF PUERTO RICO,
DEPARTMENT OF HEALTH,
San Juan, P.R., February 14, 1963.

To: Dr. Guillermo Arbona, Secretary of Health.
From: Mr. A. E. Williamson, assistant director, bureau of health.
Subject: Letter and proposed budget.

Attached is a proposed letter and attached plan for Bilharzia control as requested. Dr. Bob Anderson suggested that he would like to have a copy of anything you send to Representative Fogarty.

Also, may I suggest that a copy of the letter and plan be sent to Dr. Palmquist. If you wish I'll write a covering letter of explanation to Dr. Palmquist.

The attached letter and data are entirely the work of Mr. Perez Torres and Dr. Ferguson's groups. I think they are to be commended for its rapid preparation, so well done.

A. E. WILLIAMSON.

SUMMARY

PROPOSED BILHARZIA CONTROL PROGRAM, COMMONWEALTH OF PUERTO RICO, DEPARTMENT OF HEALTH

Bilharzia is a widespread disease of public health importance in Puerto Rico, and it is estimated that from 10 to 20 percent of the entire population is suffering from it.

An effective control program should be aimed to reduce pollution of fresh water lakes and streams, to minimize public contact with infective water and as far as possible, to exterminate the snail intermediate host.

The technique for accomplishing these goals are well developed and include programs in community sewage treatment, latrine construction, and relocation for rural areas, rural water supply improvement, health education, snail control by chemicals, environmental and biological means, and treatment of carriers.

The proposed organization of the bilharzia control program establishes those sections and activities not yet provided for by other Commonwealth agencies and centralized their administration.

The dramatic reduction in incidence achieved in our own experimental demonstration projects over the last 8 years lends confidence to the decision that an effective islandwide program, properly supported, can succeed. Puerto Rico has reached an educational and economic level prerequisite to success in this regard.

Certain areas under the aegis of the Alliance for Progress are in much need of guidance in this subject. The U.S. Veterans' Administration, the U.S. Navy, and the U.S. Army have strong interests in bilharzia for obvious reasons.

It has been estimated that an average annual expenditure of $600,000 for 5 years will eliminate this disease from Puerto Rico.

PRESENT STATUS OF THE BILHARZIA PROBLEM AND CONTROL PROJECT OBJECTIVES

1. Definitions:

(*a*) Project area: All of the island of Puerto Rico plus Culebra and Vieques.

(*b*) Endemic area: Most of Puerto Rico east of a line drawn from Arecibo to Ponce; west of this line disease distribution is spotted.

(c) Etiologic agent: Manson's blood fluke, *Schistosoma mansoni.*

(d) Intermediate snail host: The planorbid snail, *Australorbis glabratus.*

(e) Bilharzia control: Stoppage of transmission ascertained by annual diagnostic surveys in selected population samples.

(f) Progress evaluation: Determination of decline in incidence by use of the Negron-Kagan epidemiologic model and skin test-survey technique on an annual basis.

2. Current clinical status of bilharzia: Importantly, all infections, of whatever degree, cause progressive liver damage, and concurrent intestinal disturbances are debilitating and bothersome.

3. Project objectives: To remove the hazard of human infection from Puerto Rican fresh-water bodies by simultaneous fecal pollution control and vector snail destruction. In some instances snails cannot be eradicated from a breeding habitat, such as an extensive stream system, but can be severely reduced in members at significant locales. It is anticipated that bilharzia snail populations will be held at near-zero levels by biological control techniques following primary chemical destruction. By means of educational methods, knowledge of infection-prevention measures will be broadly dispersed, using the school system and health education organizations as focal points. Useful information about bilharzia is sadly lacking at all age levels at present. With an expanded distribution of latrines produced in prefabricated units the fecal pollution of water bodies near homes in endemic areas will be considerably reduced. A coordinated program will be developed for extension of purified water lines by the aqueduct and sewer authority into selected endemic communities which will lessen the inclination to use natural water for domestic purposes. Chemotherapeutics available commercially at present are dangerous to use and unsure of cure. Accordingly, the Department of Health does not generally recommend chemotherapy as part of the present experimental control program and will not do so until an effective drug is produced which has relatively few undesirable side effects.

It should be understood that the projected program will not affect continuation of present infection in thousands of Puerto Ricans since the blood flukes are able to live for many years protected in the venous system. Because of this, a snail surveillance system should be coupled with a reduced snail control group. This postcontrol-period group must remain active, as needed, as long as currently infected persons continue to pollute the water bodies. In this regard, all persons of whatever degree of infection are assumed to be equally important.

4. Proposed organization: In Puerto Rico, bilharzia is caused by a single species of parasitic worm. Infection occurs from contact with water, the infective larvae penetrating the unbroken skin. These larvae are produced and released by the thousands by snails which, in turn, become infested by exposure to water polluted by human feces. Thus, the disease passes from man to snail to man. In view of the life cycle of the parasite, the effective control program should aim to reduce or eliminate pollution of fresh-water lakes and streams, to minimize public contact with infective water and, as far as possible, to exterminate the snail intermediate host.

The techniques for accomplishing these goals are well developed and include programs in community sewage treatment, latrine construction and relocation for rural areas, rural water supply improvement, health education, snail control by chemicals, environmental and biological means, and treatment of carriers. Of these several measures, it is expected that the most permanent effects will result from improvement of sanitation and from health education.

Complete and permanent eradication of the vector snail species is a rather hypothetical goal, and there is little solace to be gained from reduction of the island snail population at relatively great expense when the basic level of sanitation which enabled infection to exist remains unchanged. Similarly, chemotherapy can only have a lasting effect after the chance of reinfestation has passed. Some of these projects (e.g., snail control) are unique to a bilharzia control program while others (e.g., community sewage treatment, improved water supply and others) are already the basic concern of existing agencies.

The proposed organization of the bilharzia control program establishes those sections and activities not yet provided for by other Commonwealth agencies and centralizes their administration. Interagency liaison is accomplished through the currently existing Puerto Rican Committee for Bilharzia Control.

In the past, throughout the world bilharzial control programs have generally followed the above pattern. To date, however, no example of successful control exists to serve as a model. The dramatic reduction in incidence achieved in our own experimental demonstration projects over the last 8 years lends confidence to the decision that an effective islandwide program, properly supported, can succeed. A great measure of this confidence lies in the fact that Puerto Rico, unlike much of the bilharzial endemic world, has reached an educational and economic level prerequisite to success in this regard. Accordingly, our estimate is for an average annual expenditure of $600,000 for 5 years. A budgetary proposal follows.

Budgetary proposal for bilharzia control

Salaries	$350, 788. 00
Miscellaneous services	40, 653. 50
Traveling expenses	59, 660. 00
Purchase of equipment	63, 300. 00
Materials, supplies and parts	60, 216. 00
Rent	10, 000. 00
Contingencies	15, 382. 50
Total	600, 000. 00

Budgetary proposal for bilharzia control

Salaries:	
Director	$6, 000. 00
Field executive	5, 400. 00
Field supervisor	4, 800. 00
Field coordinator	4, 200. 00
Health educator	4, 200. 00
6 health educator aids at $3,600	21, 600. 00
6 bilharzia control inspectors at $2,400	14, 400. 00
13 foremen at $1,680	21, 840. 00
42 laborers at $1,500	63, 000. 00
48 laborers at $1,870	89, 760. 00
2 stenographers at $1,980	3, 980.00
5 typists at $1,860	9, 300. 00
4 typists at $1,620	6, 480.00
6 laboratory technicians at $3,240	19, 440. 00
1 laboratory assistant	2, 468. 00
1 maintenance foreman at $2,700	2, 700. 00
1 nurse	2, 520. 00
1 ecologist	7, 000. 00
6 biological aides at $1,600	9, 720. 00
1 statistician	4, 500. 00
1 chemist	4, 800. 00
1 sanitary engineer	7, 000. 00
2 civil engineers at $5,100	10, 200. 00
1 hydraulic engineer	7, 000. 00
1 aquatic biologist	4, 500. 00
6 engineer aides at $2,100	12, 600. 00
1 janitor	1, 380. 00
Total	350, 788. 00
Miscellaneous services:	
Accident insurance ($1.03 per $100)	3, 613. 12
Employee and health insurance ($10.20 per $100)	35, 780. 38
Accident insurance for 18 vehicles at $70	1,260. 00
Total	40, 653. 50
Traveling expenses:	
Director	1, 000. 00
Field executive	1, 000. 00
Field supervisor	1, 000. 00
Field coordinator	1, 000. 00
Health educator	1, 000, 00
6 health educator aids at $1,000	6, 000. 00

Budgetary proposal for bilharzia control—Continued

Traveling expenses—Continued	
6 bilharzia control inspectors at $720	4,320.00
12 foremen at $720	8,640.00
35 laborers at $540	18,900.00
1 maintenance foreman	720.00
1 nurse	720.00
1 ecologist	1,000.00
6 biological aids at $720	4,320.00
1 chemist	720.00
1 sanitary engineer	1,000.00
2 civil engineers at $1,000	2,000.00
1 hydraulic engineer	1,000.00
1 aquatic biologist	1,000.00
6 engineer aids at $720	4,320.00
Total	59,660.00
Purchase of equipment:	
18 pickup trucks at $2,700	48,600.00
2 trucks, 2-ton capacity, at $3,800	7,600.00
20 power sprayers, 300 lbs. p.s.i., at $275	5,500.00
40 hand pressure pumps at $15	600.00
2 transits (engineer)	1,000.00
Total	63,300.00
Materials, supplies, and parts:	
Maintenance for 18 vehicles at $400	7,200.00
Gasoline and oil for 18 vehicles at $250	4,500.00
Gasoline, oil, and parts for 20 sprayers at $75	1,500.00
Purchase of molluscicides	15,000.00
40,000 empty boxes for fecal samples at $24M	960.00
160 pairs rubber boots, knee length at $6	1,056.00
40 pairs rubber boots, thigh length at $15	600.00
1,500 lbs. systemic herbicides at $1	1,500.00
Small tools and other material	800.00
Repair parts for pumps	700.00
Laboratory materials	600.00
Wood and hardware for construction and repair of dispensers	800.00
Materials for constructing clothes washing facilities, latrines, and other structures	25,000.00
Total	60,216.00
Rent:	
Office	6,000.00
5 warehouses at $80	4,000.00
Total	10,000.00

Mr. Fogarty. How long do you think it will take to set up a program in schistosomiasis eradication in Puerto Rico and how much do you think it would cost?

Dr. Goddard. Setting up the program would be the easiest part of the job. How long it would take to eradicate the snail, the best off-the-cuff estimate I can give you at this moment is about 5 years. And the best estimate in terms of the total cost would be something in the magnitude of—what?—$5 million?

Dr. Donaldson. I would think so.

Dr. Goddard. $5 million, $6 million.

Mr. Fogarty. That would be cheap; that would be a good investment, would it not?

Dr. **Goddard**. To me it would be. Because, as you have pointed out, sir, this has implications not only for Puerto Rico but for many of the other countries in Latin America.

DISTRIBUTION OF SCHISTOSOMIASIS

This is a map of the worldwide distribution of the disease in its various forms. It is found in many of the parts of the world, in fact in many hundreds of thousands of individuals.

Dr. **Donaldson**. It is probably the third most important disease in all the world as far as impact on less well-developed countries is concerned: Malaria, tuberculosis, and schistosomiasis.

Mr. **Fogarty**. Malaria, tuberculosis, and schistosomiasis?

HANSEN'S DISEASE

What about Hansen's disease?

Dr. **Goddard**. This would be probably No. 4 in the underdeveloped areas. It is still a major problem.

Mr. **Fogarty**. It is certainly a major problem in many of the underdeveloped areas.

Dr. **Goddard**. Africa; yes. Fortunately much less of a problem here.

We are happy to report some very significant progress in this field. You may have read about it in the newspapers, one of the Communicable Disease Center staff has developed——

Mr. **Fogarty**. I just read that recently.

Dr. **Goddard**. Yes, sir; within the last week or so—a method of cultivating or growing the Hansen's bacillus on the footpad of a mouse. This is the first time it has been done.

HISTOPLASMOSIS

Mr. **Fogarty**. Histoplasmosis is the disease that has been mistaken for tuberculosis at times, is it not?

Dr. **Goddard**. Yes. In recent years surveys have been conducted of patients who were residents of tuberculosis sanitariums to determine whether or not fungus-like diseases are complicating or actually causing the disability rather than tuberculosis. It has been found that a significant percentage of these indidivuals do not have tuberculosis, but have histoplasmosis instead.

Mr. **Fogarty**. What is the medication for histoplasmosis?

Dr. **Donaldson**. Amphotericin B is one of the groups our group in Kansas City is now evaluating.

This program is still in progress. They are getting what look to be very promising results.

Mr. **Fogarty**. How does it affect a person?

Dr. **Goddard**. The symptoms generally are almost the same as tuberculosis involving the respiratory tree, of course, and involving various degrees of disability in terms of pulmonary function.

The prevalence is not really well defined in the United States.

Dr. **Donaldson**. This is one of the diseases in which the resistance varies from individual to individual, so one can have a range varying from no clinical symptoms whatsoever to the other end of the spectrum, where the disease spreads rapidly and causes death.

The actual number of deaths from histoplasmosis is probably not very great. I do not know the exact figures. But there are a number of people who have cavities formed in the lungs and it is a chronic debilitating type of infection. Many of these are in TB sanitariums, getting TB treatment that is not doing a bit of good for histoplasmosis. The problem is to identify histoplasmosis and treat patients specifically for this disease.

INSTITUTIONALLY ACQUIRED INFECTIONS

Mr. Fogarty. What are you doing in the area of institutionally acquired infections?

Dr. Goddard. We are carrying out a number of studies in this area.

Mr. Fogarty. Would you supply those for the record?

Dr. Goddard. All right, sir.

(The information follows:)

Studies on Institutionally Acquired Infections

The Communicable Disease Center program on institutionally acquired infections is directed toward (1) determining the epidemiological factors related to the human host, the environment, and the causative organisms themselves, (2) improving laboratory diagnostic procedures, and (3) developing and evaluating methods for the control of these infections.

Although this program was initiated because of concern about the emergence of drug-resistant staphylococci, it has rapidly become apparent that many other organisms are involved in institutionally acquired infections. These include organisms which range from those producing infant diarrhea (*Escherichia coli*), to urinary tract infections (*Pseudomonas*) and meningitis (*Proteus*). Just as with the staphylococcus, these organisms now known to be pathogenic used to be considered relatively unimportant. Consideration must also be given to the spread of viruses through the institution and to the overall management of the infectious disease patient in the general hospital.

Epidemiological studies are being carried on in a number of hospitals throughout the country, ranging from five large teaching hospitals to small nonteaching institutions. Along with developing improved methods of continued surveillance for all types of hospital infections, specific outbreaks are investigated intensively. Relationships of these hospital-acquired infections to the occurrence of disease in the community at large are determined. Environmental factors within the institutions, including air conditioning, sterilization and disinfection, housekeeping procedures, and traffic flow, and handling of laundry are being studied in relation to the occurrence of these infections. Efforts are being made to assess the relative importance in different institutions of environmental factors as compared with person-to-person transmission.

Laboratory studies are directed toward improving diagnostic procedures for the identification and specific typing of the various strains or organisms involved. Efforts are being made to standardize procedures and reagents to permit adequate comparisons between institutions and to allow effective evaluations of control measures. Application of fluorescent antibody tests and agar-gel diffusion is being made when appropriate.

Experimental control studies are being carried out, both by intramural research and in selected institutions. These activities include testing methods of surface decontamination, measuring the movement of bacteria in air and through various filter devices, varying the air supply to different areas of the hospital, evaluating the effectiveness of ultraviolet and other disinfecting procedures and modifying the design of infant incubators.

As information is obtained from these studies, consultation and technical assistance are provided to institutions and health departments. Laboratory reference diagnostic services are made available and problems associated with institutionally acquired infections are stressed in Communicable Disease Center training programs both in formal courses and through seminars and conferences.

PLAGUE

Mr. Fogarty. What about plague? Have you any problems in that?

Dr. Goddard. In terms of cases, as I recall last year we had about three cases of plague. We had two involving airmen who were out hunting in the neighborhood of one of the airbases in the Southwest Our San Francisco plague station personnel were able to assist in the proper diagnosis, thus assuring appropriate treatment for these individuals, for which the Air Force was very grateful. But one of the very interesting things about this disease is that the plague bacillus is extremely prevalent in nature. At the time of the last survey, which as I recall was 1947, it existed as far east as the Mississippi River. We have no knowledge since then as to the exact distribution of the plague bacillus in nature. But it is extremely ubiquitous. In national park areas, for example, the ground squirrels, chipmunks, the small animals are often infected and represent a threat to the campers and picnickers, and particularly children who are apt to pick up a sick or dying animal.

In fact, one of the cases that did occur within the past couple of years was a small girl who handled one of these animals and then developed the plague and, as I recall, died.

Mr. Fogarty. What about your station in San Francisco?

Dr. Goddard. Plague station, sir?

Mr. Fogarty. Do you ever get there?

Dr. Goddard. Yes, sir; I have visited all of the stations we run now, except for Puerto Rico.

Mr. Fogarty. Have you been there in the summertime?

Dr. Goddard. No, sir. I was there on a fairly cool day.

The station has been air conditioned since you were there.

Mr. Fogarty. Oh, it has?

Dr. Goddard. Much improved.

Mr. Fogarty. That is what I was leading up to. It was a warm day when we were there; I do not know how those people could work in that place.

Dr. Goddard. Well, I would like to say one of the things I have been impressed by since joining the Communicable Disease Center is the willingness of our staff to work under—in many instances—extremely difficult conditions.

Mr. Fogarty. Well, it was worse than that.

Dr. Goddard. Well, sometime I would like to take you to visit one of the bat caves.

FLUORESCENT ANTIBODY DIAGNOSTIC TECHNIQUE

Mr. Fogarty. A few years ago we went down to Atlanta, and we were impressed with the initial work you were doing in this fluorescent antibody diagnostic technique that was being developed there 7 or 8 years ago. Have you made any improvements on this?

Dr. Goddard. Yes, sir.

Mr. Fogarty. Tell us something about it. We are very much interested in that. We hope we can get more information on that to the State health departments throughout the country. I think they have been trying to do something with this during the last couple of years.

Dr. **Goddard.** Yes, sir. This fluorescent antibody diagnostic technique provides for more rapid and accurate diagnosis, in many infections.

Mr. **Fogarty.** Can you give us a couple of examples?

Dr. **Goddard.** At the present time, it is being commonly used for the diagnosis of streptococcal infections; rabies.

Mr. **Fogarty.** Give us an example of the old way and this way.

Dr. **Goddard.** I think I can perhaps give you a very dramatic example of how this has been worked into State department health lab programs, helping the practicing physicians. In one New England State, in 1 day, they have been able to carry out 587 identifications for streptococcus; checking throat swabs taken from patients.

Mr. **Fogarty.** That was not in Rhode Island; was it?

Dr. **Goddard.** No, sir. Connecticut.

This represents 50 percent of their annual capability back in 1954, before this test was developed. In fact, they estimate that during this year, they will carry out 74,000 such identifications. Through an arrangement with the heart program, they are able, on the same day, to transmit the information as to whether this is or is not a streptococcal infection to the heart program. They in turn call the physician who sent the sample in and give him that information. The physician can then begin treatment immediately, to prevent rheumatic fever, which of course, is one of the great concerns when you are dealing with a streptococcal infection.

In 1962, they examined 59,000 swabs. This represents a fantastic improvement in the capability of the laboratory to assist the practicing physicians in the care of their patients and should prevent a significant number of cases of rheumatic fever and the disabilities that accompany it. It is a very dramatic type of change in laboratory practice. In rabies it means we are now able to determine the presence of the rabies virus in the suspect animal within a period of several hours. Thus, treatment can be instituted extremely early, and this should help cut down the number of deaths from rabies.

The F.A. test is also of use in the diagnosis of plague and anthrax. We are also developing and doing work on its use in the field of smallpox, where of course, it will represent a considerable time saving. This will have many implications in terms of determining whether or not it will be necessary to carry out a large scale community program, or to immunize selected groups of people in a short period of time.

Also, it has application in the diagnosis of diphtheria; again it is a great time saver, and in this disease it is very important to treat early, and treat effectively.

I feel that this entire field of fluorescent antibody usage is wide open. Any time you have antigen-antibody reactions occurring in one of these diseases, we could anticipate being able to develop a fluorescent antibody technique to handle the diagnosis of the disease.

Mr. **Fogarty.** Have you made any significant improvements in this technique in the last year?

Dr. **Goddard.** I would say a most significant improvement.

Mr. **Fogarty.** I know you had problems in the early days.

Dr. **Goddard.** Yes, sir. One of the problems that you are probably familiar with, has been the lack of standardization, of the fluorescent dyes to be used as part of the test. The biochemistry group at our Savannah station, has been working on this in the past year, in cooperation with our Laboratory Branch and now have come up with an improved technique so that we have a more uniform dye to be used. The manufacturers, by following the standards we will suggest, will provide better diagnostic aids to the station.

EXTENT OF USE BY STATE HEALTH DEPARTMENTS

Mr. Fogarty. Does every State health department in the country have this equipment?

Dr. Goddard. No, sir. I cannot give you the exact number that now have it, but there are still some yet to implement this program.

Mr. Fogarty. And those that don't have it in their own laboratories, I don't suppose, will use it. They don't take advantage of it. Is that a fair statement?

Dr. Goddard. That is a fair statement.

Mr. Fogarty. Will you put in the record those States?

Dr. Goddard. Yes, sir.

Mr. Fogarty. Who have not yet taken advantage of this technique?

Dr. Goddard. Yes, sir.

(The material follows:)

Utilization of Fluorescent Antibody Techniques by States

All States now have the equipment necessary to perform fluorescent antibody procedures and have at least one person trained in application of these procedures to the diagnosis of streptococcal infections.

Forty-one States and Puerto Rico are currently applying the techniques to the diagnosis of one or more diseases. The remaining States are in various stages of development in working these procedures into their laboratory activities.

Mr. Fogarty. Mr. Denton.

CONTROL OF YELLOW FEVER

Mr. Denton. I am personally glad that you are starting this program to eradicate the *Aedes aegypti* mosquito. I was in Panama just shortly after the Public Health Service had taken over the Gorgas Laboratory, for the Public Health Service, and I talked to two Panamanians there, that were working on yellow fever; some Health people told me they knew more about yellow fever than any other living person.

They had an epidemic of yellow fever just a year before in Panama, and they said it was traveling north and they said if it ever reached the United States, it would be very disastrous, because this particular mosquito was very prevalent, particularly in the southern part of the United States.

I have been wondering for a long time why something along this order was not done. Now, there is one thing I wanted to ask you. I thought at the turn of the century, we eradicated yellow fever in this country by destroying that mosquito with petroleum on lakes or swamps where they bred.

Dr. Goddard. No, sir. Not through mosquito control; through quarantine measures. We were able to check the spread of the disease, holding out persons suspected of having the disease so that there was no natural reservoir for the mosquito to acquire the disease and transmit it to others.

Mr. Denton. But there was no program to eradicate that mosquito?

Dr. Goddard. No, sir. There is not.

Actually, not until World War II, when DDT became available, as I recall in 1943, did we have a tool to tackle this job of mosquito eradication.

Mr. Denton. I thought when we built the Panama Canal, one great problem was this yellow fever was disastrous to the people who were not natives, and Gorgas went in there, and eradicated yellow fever by controlling that mosquito and that was one great move that he made that enabled us to build the canal.

Dr. Christensen. I think, Mr. Denton, that there were attempts made to control the mosquito, but in this country, the mosquito which carries yellow fever has never been eradicated and it has always been prevalent. I think in the early days, it was the protection of the individual against the mosquito, rather than eradication of the mosquito itself.

Dr. Goddard. A lot was done, Mr. Denton, through controlling breeding places. During the work on the Panama Canal, the spreading of oil, as I recall, on the natural breeding places was very important in the control of the mosquito.

Mr. Denton. I remember in high school, I had to write some paper on some subject, and I took the work that was done in eradicating yellow fever in the Panama Canal Zone. I remember a good deal that I read at that time, told how the natives laughed to see Americans out chasing mosquitos.

Another thing, these Panamanians told me this. They said they were satisfied it was something besides the mosquitos that carried this yellow fever. They did not know what it was.

Do you know if anything further was done along that line?

Dr. Donaldson. You spoke about this last year, Mr. Denton, and we have done our best to run this down.

Mr. Denton. You never found anything?

Dr. Donaldson. There are the animals in the jungle, for example. The possum and the monkey, but of course, they are bitten by the mosquito.

There are two types of mosquitoes which are involved. I wonder if this might be the thing. The *Aedes aegypti*, which is the mosquito which transfers the disease in the urban area, from person to person. In the jungle, the virus is transmitted from monkey to monkey by another type of mosquito, the *Haemagogus* mosquito. It is a tree breeder, and breeds in the bracts of plants living in the trees. But as far as a mite or a tick, we have found nothing on that.

Mr. Denton. Nothing on that order?

Dr. Donaldson. No, sir.

Mr. Denton. At least, I thought that is what he told me. I had an Army officer with me at the time. They talked about it for some time.

DEVELOPMENT OF MEASLE VACCINE

What have you done about the inoculation for measles?

Dr. **Goddard.** The measle vaccine developments in recent years, have been most encouraging. We have, and others have carried out studies of the efficacy of two different types of vaccines used singly, in combination, and in combination with gammaglobulin. Neither of these vaccines have been licensed for general distribution as yet.

I would say some 25,000 to 30,000 children in this country have participated in these field studies, that have been carried out over the past 3 or 4 years.

Mr. **Denton.** Has it been successful?

Dr. **Goddard.** Yes, the level of protection provided with both vaccines, has been about 90 percent. The individuals receiving the vaccines have been followed through subsequent months, and in some instances, the studies are still underway to determine what level of immunity they now possess.

STAPHYLOCOCCUS INFECTION STUDIES

Mr. **Denton.** When I was in Atlanta some time ago, they had a problem of the spread of staphylococcus infection in the hospital, and they were doing quite a bit of research on that. Has any progress been made in that program?

Dr. **Goddard.** Yes. Staphylococcus infection, in hospitals, both in personnel and in patients, continues to be a worrisome problem for us, and for the entire medical community.

We are doing some studies approaching this problem in a variety of ways.

One is through environmental control, using better filtration in the air-conditioning systems. A second involves better practices among the nursing and hospital personnel, to cut down the spread. A third and a very dramatic type of study that is now being carried out, involves the substitution of one form of staphylococcus in those individuals who are carriers, for the more virulent form. In other words, you deliberately introduce a nonvirulent form of staphylococcus into the throats, and this overgrows, and prevents the growth of the virulent form of staphylococcus. These studies are now being carried out in groups of volunteers in the Atlanta area.

Mr. **Denton.** Some people carry the staphylococcus germ?

Dr. **Goddard.** That is correct.

Mr. **Denton.** And it is not infectious with them?

Dr. **Goddard.** Let's say that their body has learned to live in harmony with these germs.

TRANSFER OF ACTIVITIES FROM NIH

Mr. **Denton.** Now, the communicable disease section of the National Institutes of Health was transferred to you when?

Dr. **Goddard.** The research grant activities in communicable diseases are to be transferred to us July 1, 1963.

Dr. **Donaldson.** July 1, 1963.

Mr. **Denton.** Will any personnel be transferred here?

Dr. **Donaldson.** No, sir.

Mr. Denton. You show on page 119 of the justifications, that there is a comparative transfer of $2,269,000. Is that from this activity?

Dr. Donaldson. What page is that, Mr. Denton?

Mr. Denton. 119.

Dr. Goddard. That is the total of all of our comparative transfers, sir. Not just the research grants.

Mr. Denton. Now, what other transfers were made to you?

Dr. Donaldson. Mr. Kelly spoke about this.

Mr. Kelly. On page 117.

Dr. Goddard. That breaks those down.

Mr. Denton. Page 117?

Dr. Goddard. Yes, sir.

Mr. Hambleton. It includes transfers of $600,000 for the supportive service to the TB and the venereal disease programs.

Mr. Denton. Let me look at page 117.

Where does this show?

Mr. Kelly. Up at the top. You notice, 1963, the appropriation was $10,062,000 and then there follows an identification of six comparative transfers. The seventh item is the proposed supplemental.

Mr. Denton. Suppose I put this in the record, then. Page 117 down to obligations by activities. That would be the first part of that.

(The information follows:)

Communicable Disease Activities

Summary statement—Amounts available for obligation

	1963	1964
Appropriation	$10,062,000	$30,429,000
Comparative transfers from:		
"Control of tuberculosis, Public Health Service"	+210,000	
"Control of veneral diseases, Public Health Service"	+406,000	
"General research and services, National Institutes of Health"	+88,000	
"Allergy and infectious disease activities"	+1,484,000	
"Neurology and blindness activities"	+57,000	
"Radiological health activities, Public Health Service"	+24,000	
Proposed for separate transmittal, program supplemental for community immunization program	+12,600,000	
Total	24,931,000	30,429,000

Mr. Hambleton. Mr. Denton, you asked if any positions would be transferred.

There will be two positions transferred from the National Institutes of Health for the research grants.

Mr. Denton. I see.

SUPPLEMENTAL REQUEST FOR VACCINATION OF YOUNG CHILDREN

Now, you are asking for a supplemental appropriation of $12,600,000.

Dr. Goddard. Yes, sir.

Mr. Denton. That is a very large supplemental. While it does not come before us, could you give us just a general idea why it is so large?

Dr. Goddard. This is for the initiation of the vaccination assistance program; a program of grants to the States, to get underway this task of immunizing some 14 million children in this country under 5 years of age who have not been immunized against diphtheria, whooping cough, poliomyelitis, and tetanus.

These moneys in the supplemental would be used during this and the next fiscal year, to provide grants to the States for the vaccination programs which they develop, on a statewide and communitywide basis.

LOCATION OF RESEARCH ACTIVITIES

Mr. Denton. When this transfer was made from the NIH did the Rocky Mountain Laboratory go to you, too?

Dr. Goddard. No, sir.

Mr. Denton. You do most of your research at Atlanta, don't you?

Dr. Goddard. Let me put it this way. We carry out studies in Atlanta; field studies in Greeley, Taunton, Phoenix, San Francisco, and Kansas City; but if we take the total number of personnel involved, we have more of our personnel in Atlanta and do more of our work there.

Mr. Denton. All these places that you mentioned; you do intramural research work?

Dr. Goddard. Yes.

Mr. Denton. And you also make laboratory tests for the various States, for the board of health?

Dr. Goddard. We provide services to the various States throughout the country for a number of specific disease entities; yes, sir.

Mr. Denton. I remember that you made an investigation in the cause of sleeping sickness—one in the State I lived in.

Dr. Goddard. Yes.

That would be under our epidemic aid program.

Mr. Denton. Heretofore, have you done any work in research grants?

Dr. Goddard. No, sir.

Mr. Denton. You will be doing that now?

Dr. Goddard. Yes, sir; after July 1.

PART-TIME EMPLOYMENT

Mr. Denton. Do you have any college students working for you in the summer?

Dr. Goddard. Yes, sir. We do have summer employment program for college students each year.

Mr. Denton. About how many do you employ?

Dr. Goddard. Oh, the number will vary from year to year, but 15 to 20, I believe, were employed last summer, in various activities.

Mr. Denton. Do you have any consultants that you call in to work part time?

Dr. Goddard. We have a number of consultants that we use a few days each year. The number would be about 60 that are used on a part-time basis.

Mr. Denton. What do you pay them per day?

Dr. Goddard. Fifty dollars a day and travel expenses—per diem.

INCREASE IN NUMBER OF EMPLOYEES

Mr. DENTON. Now, you show here that in 1963 you had 1,318 employees.

Dr. GODDARD. Yes, sir.

Mr. DENTON. And this year that will be increased to 2,048, which is an increase of 730.

Dr. GODDARD. Yes, sir.

Mr. DENTON. That is a very large increase, but you show that 600 of those are for this program——

Dr. GODDARD. Yellow fever mosquito eradication program.

Mr. DENTON. Yes.

You have full-time equivalent of all other positions; 105 in 1963 and 175 in 1964, which makes an increase of 70?

Dr. GODDARD. Yes, sir.

END OF YEAR EMPLOYMENT

Mr. DENTON. I don't understand this. I asked this several times, but in 1963 the average number of employees was 1,218. In 1964 it will be 1,767. Now, the number of employees at the end of the year is 1,350 and it will be 2,004 in 1964.

I don't understand why there are so many more people working at the end of the year than the average number of employees.

Dr. GODDARD. I would like to ask Mr. Kelly, if I might, to answer that. This is a matter of how we account for our employees to the Civil Service Commission. They have certain fixed methods for reporting of employees.

Mr. KELLY. I think it might be helpful if we looked at it something like this, Mr. Denton. If we have 1,200 employees at the end of 1963 and 2,000 employees at the end of 1964, we will have had an increase of 800.

Mr. DENTON. That is right.

Mr. KELLY. This is just slightly more than the increase in the number of permanent positions. The reason why the employment at the end of the year is so much higher than the average, is that during the entire year, we will be putting on these 800 people. Therefore, on the average, these people will be working less than the full year, and, of course, will not be paid for a full year. In computing the average employment we are only talking about how many employees we paid. Nevertheless, we will employ 800 people, and, at the end of the year, expect to have them all on the payroll. This is one of the things that gives rise to this perennial problem of discussing annualization, because in 1965, we will have to talk about the full year cost of those employees although we will not incur the full year cost in 1964.

INCREASES AND DECREASES

Mr. DENTON. On page 119 you give the increases and decreases in your appropriation and also a summary of your expenditures.

I would like to put that in the record, if I may, at this time.

(The page follows:)

Summary of changes

1963 enacted appropriation	$10,062,000
Proposed program supplemental	12,600,000
Comparative transfers	2,269,000
Total estimated obligations, 1963	24,931,000
1964 estimated obligations	30,429,000
Total change	+5,498,000
Increases:	
(*a*) "Built-in":	
1. Increased pay costs	+183,000
2. Annualization of 58 positions new in 1963 (proposed supplemental)	+285,000
3. Annualization of 64 positions new in 1963	+193,800
4. Two extra days' pay in 1964 (260 days in 1963; 262 days in 1964)	+51,000
Subtotal, "Built-in"	+712,800
(*b*) Program increases:	
1. Expansion of research grants	+145,000
2. Expansion of national laboratory improvement and reference services (75 positions)	+707,000
3. Expansion of training of public health workers (32 positions)	+311,000
4. Expansion of medical audiovisual services (8 positions)	+202,000
5. Expansion of methodology research	+5,000
6. Expansion of community immunization program services (15 positions)	+106,000
7. Initiation of *Aedes aegypti* eradication program (600 positions)	+5,000,000
8. Increase in pro-rata share of "Bureau of State Services management fund"	+235,000
Subtotal, program increases	+6,711,000
Gross increases	+7,423,800
Decreases:	
1. Nonrecurring program costs (proposed supplemental)	—10,000
2. Nonrecurring program costs	—20,800
3. Reduction in community immunization grants	—1,895,000
Subtotal, decreases	—1,925,800
Total net change requested	+5,498,000

VACCINATION ASSISTANCE PROGRAM DECREASE

Mr. **Denton.** The one last item that you have on page 118 is "41. Grants, subsidies, and contributions." That was $13,059,000 in 1963; in 1964 that will be $10,595,000. That is a decrease of $2,464,000. Now, what does that embrace?

Dr. **Goddard.** This again, is the vaccination assistance program, and the decrease is a reflection of the decrease in the program grants to the States for the coming fiscal year.

Mr. **Denton.** Does this embrace money that you give to the State boards of health?

Dr. **Goddard.** Only for the vaccination assistance program, specifically. No other program.

Mr. **Denton**. Why is that being curtailed?

Dr. **Goddard**. During the first full year of operation, we anticipate vaccinating about 50 percent of the children involved. So in the second year, lesser amounts will be needed for the purchase of vaccine, and for the associated activities in the conduct of the program.

Mr. **Denton**. Are they going to be vaccinating for the various diseases you mentioned a few moments ago?

Dr. **Goddard**. Yes, sir. Diphtheria, whooping cough, polio, and tetanus.

Mr. **Kelly**. I would like to underline, Mr. Denton, this decrease is based on the assumption that the supplemental request will be enacted; that is, the $12,600,000, in 1963, that is now pending before the Congress.

Mr. **Denton**. Mr. Fogarty asked you a question, but I am going to ask it again.

What would happen if you didn't get your supplemental?

Dr. **Goddard**. It would extend the period of time that would be required to do the job. Our best estimate is that the total amount of money needed to do the job, will remain the same, but it would simply add another year on to the projected end of the program.

ADMINISTRATION OF RESEARCH GRANTS PROGRAM

Mr. **Denton**. When you make grants for research for communicable disease, do you have a board that will pass on those grants or not?

Dr. **Goddard**. No, sir. We will continue to use the NIH mechanism, as has been done in the past.

Mr. **Denton**. Then, just what would you do if they decide on the grants?

Dr. **Goddard**. We have a high degree of confidence in their ability to discriminate between a good and a poor grant. Our job, as I see it, is to work with the States, and the educational institutions, and the research groups, to make certain that there is a close correlation between what they are working on and what we are working on.

Mr. **Denton**. What I am trying to get at is just what is the change if they continue to pass on the projects? The only thing is that you will pay them out of your appropriation instead of paying them out of theirs, is it not?

Dr. **Christensen**. Mr. Denton, after the transfer of the research grants program to Communicable Disease Center, it will be administered just the same as the NIH grants are being administered at the present time.

However, the research projects will relate more closely to the mission of the Communicable Disease Center and therefore, will permit additional studies in the general area of which the Communicable Disease Center is interested in.

Mr. **Denton**. That isn't what I am trying to ask you. What I am trying to find out is: What does the communicable disease agency do now that they didn't do before? Do they do anything other than just pay for the grants out of the appropriation, instead of having it paid under NIH's?

Dr. **Goddard**. Beginning July 1, we have responsibility for the administration of this grants program. Our staff will be working with institutions and State health departments, seeking groups that are concerned about problems analogous to those that we have described here today.

In other words, they will be looking at groups that are interested in the control of staphylococcal infections in hospitals. I think if I give two or three examples of the types of grants that are of interest to us, and more directly related to our program, it might help clarify this.

Mr. DENTON. That is not what I am asking.

What I am trying to find out is, what you do more than you have done before. As I understand the situation, it is that the NIH has been approving these grants. They are now going to approve these grants and you are depending upon them to do it.

What new activity do you have, other than paying the bill and having an appropriation given to you instead of NIH?

Dr. CHRISTENSEN. They will be working much more closely with the investigators. They will be contacting the schools. They will be contacting other research people in terms of the problems of CDC that need to be further looked into, and this, in turn, I think, will expand this general area of research.

Mr. DENTON. That has been done for years.

Dr. CHRISTENSEN. No. It has not been done by the CDC personnel and the research activities in this general area have, we think, been minimized because of it.

Mr. FOGARTY. We encouraged you to do this in order that the funds will be budgeted where the program activities are carried out.

Mr. KELLY. First we did it with the environmental health activities, and this year, with communicable diseases.

I think there are a number of advantages. I think it will get (1) the intramural in direct operation of staff to a greater degree engaged in the direction of the extramural program, in the selection of the people to serve on the study sections, in the identification of the problem areas, and in the stimulation of projects in gap areas.

I think it will also have the effect of bringing before this committee the amounts of money that is required for a given functional program, such as the communicable disease program and not have you having to make the decisions on the level of support, on a divided basis, that the direct operations appears in one place, but the extramural appropriation activities appear on another.

I think that you will get a better opportunity to see the total program that is being carried on, in each of these activities, in this method of presenting the budget.

Mr. DENTON. Now, are you still operating a facility at Montgomery, Ala.?

Mr. KELLY. No, sir; we are not.

ANIMAL BREEDING AND STORAGE FACILITIES

Mr. DENTON. When you opened your new laboratory in Atlanta, as I remember, it was on the campus of Emory University, and there was objection there to your keeping large animals, such as horses, and that kind of animal.

What have you ever done about that?

Dr. GODDARD. Well, I am happy to tell you that within a matter of days, the actual contract for construction of the Lawrenceville facility will be let, and construction will then proceed very shortly thereafter. So we will have, within 25 miles of the Communicable Disease Center, a facility where we can have large animals which are necessary for many of our studies; plus our National Rabies Center, where we will maintain our dog population in isolated areas and not disturb any of our good neighbors.

So this is well underway in terms of getting close to becoming a reality.

Mr. DENTON. Thank you.

Mr. FOGARTY. Mr. Lesinski?

Mr. LESINSKI. Dr. Goddard, how many animal farms do you have at HEW?

Dr. GODDARD. At the present time, we have none. At the present time, we are using the Chamblee facility for breeding of small animals. We purchase our large animals. We do hold a certain number of animals for studies at the Las Cruces field station for the study of rabies. At San Francisco, in the quarantine station, it is necessary to have certain animals, such as rabbits, hamsters, and so forth, to have the diagnostic capability in plague.

So most of our stations do have animal holding quarters, where the animals are kept for use in studies, but this will provide us with a first-rate facility for the breeding of animals, and holding of larger animals.

HEPATITIS TRANSMISSION

Mr. LESINSKI. You brought up hepatitis, which is infection of the liver. Isn't that carried by water?

Dr. GODDARD. It can be carried by water. There are a number of suspected modes of transmission but without being capable of identifying the virus or viruses that cause the disease, we have never been able to demonstrate all of the modes of transmission. Waterborne infection is certainly one.

Mr. LESINSKI. In my district, they attributed the outbreak of hepatis to water.

Dr. GODDARD. Yes, sir.

Mr. LESINSKI. Therefore, we need more emphasis on pollution and control of pollution, of our streams.

Dr. GODDARD. There is no question, sir, that better control of pollution aids in all of these matters. However, there are other modes of transmission of hepatitis, too.

Mr. LESINSKI. Can you tell me how?

Dr. GODDARD. Food-borne hepatitis has been described. Person-to-person is suspected. Almost any medium can be involved in the spread of hepatitis. One form—serum hepatitis, for example, is a very difficult problem which we have to contend with. The spread is often through contaminated medical instruments: Needles used for injections, if not properly sterilized, can contribute to the spread of it.

Whole blood products have been a major factor in the spread of serum hepatitis.

These two diseases appear to be somewhat different, but they both involve the liver; one being called infectious hepatitis, which is spread by water, food, or direct contact. The other is serum hepatitis, involving the use of blood products, or improperly sterilized instruments.

Mr. Lesinski. I have heard of that, where they use improper blood transfusions; that would give hepatitis.

Getting back to Panama, didn't the Corps of Army Engineers use oil on the swamps there to eradicate the mosquito?

Dr. Goddard. I would say it was used to control the breeding.

Mr. Lesinski. Control the breeding, I mean. Yes.

Dr. Goddard. Yes. This is one method that can be used. However, in eradication, we have more effective tools available, today, mainly DDT.

NATIONAL LABORATORY IMPROVEMENT

Mr. Lesinski. You talked about laboratories, and the fact that nine did not have the proper system of going through their determinations.

Does that show the fact that the laboratory technicians are not properly trained, or not qualified, or what is it?

Dr. Goddard. It is actually a combination of factors. Certainly, one of the important ones is good training. The State laboratory directors feel that they need improvements in the training programs, and better means of providing on-the-job training, and refresher education. Another contributing factor is the confusion that exists due to lack of standardization of test procedures, and as I indicated, much of our effort will be directed toward developing standardized test procedures which then will be available for all to use.

Mr. Lesinski. Well, I can accept that, but in a case such as you cited here, that the laboratory technicians are not properly trained, or else lackadaisical in their work.

Dr. Goddard. I would say that the vast majority of them, as in most professions, are extremely conscientious individuals. They are hard workers. Now, many times, jobs are thrust upon them, where enough time isn't available for adequate training, or in fact, where new methods and techniques have been developed. In some instances it may be due to a lack of good equipment. As we have moved more into the diagnosis of viral diseases, equipment has become increasingly important. Actually we have a multiplicity of factors at play in this situation. Our lab technicians, like most people, are anxious to do a good job every day, and our lab directors recognize the need for better training. We had 7,500 persons come to the Communicable Disease Center last year for training in communicable diseases, mainly in the labs.

Dr. Christensen. In regard to the laboratory improvement program, the effectiveness of this type of approach has been well demonstrated in the past. In the older days, with the serological tests that were used for syphilis, the results were extremely variable, and at one time they were almost to the point where a flipping of a coin would be just about as good and dependable as the results from a serological test.

However, due to the program that was carried on with the State health departments, over a period of years, the sensitivity and specificity of the serological tests now have increased as done by these State laboratories to where we are now up to—well in the 90-percent range—and this, I think is a remarkable improvement, and a real demonstration as to how effective this type of program can be.

Mr. LESINSKI. Well, can't the syphilis germ be seen underneath a microscope?

Dr. CHRISTENSEN. It can be seen in certain stages of the disease. In the infectious stage, sometimes you can demonstrate the spirochete from the lesion under the microscope but most of the time, they supplement this with a serological test.

Mr. LESINSKI. What kind of a test is a serological test?

Mr. CHRISTENSEN. This is a blood test where they take the serum from the blood, and then test it against an antigen and they are able then to determine whether the person has syphilis or not.

Mr. LESINSKI. In other words, you are trying to determine if he has it in the early stages.

Dr. CHRISTENSEN. The serological test doesn't determine the stage of the disease. It just determines whether or not the person has the disease or has had it.

Mr. LESINSKI. Or has had it?

Dr. CHRISTENSEN. Yes.

Mr. LESINSKI. I see.

SCHISTOSOMIASIS

You mentioned schistosomiasis, in the snails. Snails are used as food in many nations, and is this how it is spread?

I am interested in this because of the fact that it is eaten as a food.

Dr. GODDARD. This particular species is not used as a source of food, sir. It simply lives in the streams, and pollutes the streams.

Mr. LESINSKI. And carries it?

Dr. GODDARD. Yes.

Mr. LESINSKI. I see. In other words, by contact of the polluted stream, you will get it.

Dr. GODDARD. Yes.

USE OF ANTIBIOTICS

Mr. LESINSKI. Antibiotics often times, when used, for instance, against syphilis, the body will build up an immunity to it. Have you found in your studies that excessive use of antibiotics will actually destroy the effectiveness of the antibiotics?

Dr. GODDARD. Do you mean overuse them?

Mr. LESINSKI. Right.

Dr. GODDARD. This is something that the medical profession has been very much concerned about in the past decade and I think most of the practicing physicians have limited their usage of antibiotics over what their normal practices had been perhaps 10 years ago. So I would say, to that extent, we have less of a problem in overusage today than we had at that time.

Mr. LESINSKI. Have you felt that at one time, though?

Dr. GODDARD. At one time, we felt indeed, there was overusage of antibiotics. Of course, one always has the possibility, in treating an individual patient, that that particular person can become sensitive to the antibiotic, or the organism involved may be resistant to the antibiotic. So, here again, it is extremely important that the practicing physician have good laboratories available to him where sensitivity tests can be conducted to determine whether or not the germ that is causing the problem is sensitive to the antibiotic that he has chosen to use for the individual test.

Mr. **Lesinski**. People have actually died from that.

Dr. **Goddard**. Those deaths that have occurred, the majority of them, we would classify as being due to anaphylactic shock, where the person has become sensitized by previous use to the antibiotic, and then readministration has caused the person to go into anaphylactic shock. This fortunately, happens very rarely.

COMBINED VACCINE FOR THREE DISEASES

Mr. **Lesinski**. Doctors are prone to combine various vaccinations into one shot.

Do you feel this is proper or not?

Dr. **Goddard**. I would say that in our present practices, the combining of what we call DPT, diphtheria, whooping cough, and tetanus, in one vaccine, that is given at one time, and repeated at appropriate intervals to build up the level of immunity, is certainly a good practice. This reduces the number of immunizations that must be given to the child, and it has been demonstrated that you build effective levels of immunity against these diseases with the combined vaccine.

Mr. **Lesinski**. As a layman, you seem to be fighting three battles at one time; and the effectiveness wouldn't be there.

Dr. **Goddard**. Fortunately, there seems to be some selectivity in the body that enables it to sort out the stimuli to the antibody-forming mechanisms and enables them to carry out the job very efficiently.

POSSIBLE SUITS AGAINST THE GOVERNMENT FOR DISEASES ACQUIRED ON FEDERAL PROPERTY

Mr. **Lesinski**. One final question. You spoke about some diseases in national parks. I believe you mentioned it. What is it now?

Dr. **Goddard**. Plague.

Mr. **Lesinski**. Plague?

Dr. **Goddard**. Yes.

Mr. **Lesinski**. And the Supreme Court decision here recently, where the fellow, injured on a railroad, was bitten by a bee, I believe it was, or some insect, and the Court awarded him some $200,000 because the railroad did not properly control the insects in the right-of-way.

Could not this individual sue the U.S. Government, if he was so infected or poisoned?

Dr. **Goddard**. Sir, if I could be facetious, I can give you a horseback, medical doctor's opinion. You could probably sue them, but I don't know if you would collect it or not.

I don't know the answer. Truthfully, I don't know.

Mr. **Lesinski**. Wouldn't there be a rash, because of this decision, a rash of appeals to the Government?

Dr. **Goddard**. I honestly would not be in a position to evaluate that, sir.

Mr. Lesinski. It seems to me you would open the door to a Pandora's box.

Mr. Fogarty. Mr. Laird.

DECENTRALIZATION

Mr. Laird. Back last year, in our committee report, on page 28, we stated:

> A rather significant amount of the funds included in the National Institutes of Health budget is actually transferred each year to the Bureau of State Services to finance programs administered by it. It appears to the committee that it would be more orderly and businesslike to have the funds budgeted in the appropriations for the organizational units administering the programs. The committee will expect that the budget for 1964 be prepared on this basis.

I note that on page 117 of your justifications, Doctor, you show these particular transfers which were discussed at some length by other members of the committee. Do you think that this decentralization of authority and these transfers will in any way impede the program?

Dr. Goddard. No, sir.

Mr. Laird. How do you feel about decentralization of the work of the Public Health Service?

Dr. Goddard. May I approach that in this way? I just came back from the Federal Aviation Agency where I was on loan for 3 years. I had considerable experience with decentralization. One of our jobs was the development of an aeromedical research laboratory for the United States and Federal Aviation Agency, and one of the questions that naturally we were confronted with was where should we locate it? Should this be a decentralized function or should it be one carried out here in Washington?

Now, the major factor affecting the decision as far as geography was related to the types of work we had to carry out. Our tasks in the research field of aeromedicine were largely concerned with studies of personnel working in air traffic control centers. This meant that it would be advantageous for us to locate the facility at a point where we would have available a large number of these individuals for the type of studies we chose to do. This made it logical to locate the facility in the FAA's primary training center in Oklahoma City, and we did. It was constructed in a decentralized location for that purpose.

Now, I might tell you that having had, then, some experience running the program, it did impose certain difficulties on us. In general, I favor decentralization of functions to the lowest level where the responsible decisions can be made.

Mr. Laird. In your work at CDC have you found a communications problem that has bothered you, between the Public Health Service here in Washington and your work in Atlanta?

Dr. Goddard. I would have to say yes, there are times when we have communications problems, as you do with any facility that is located several hundred miles away. I had the same problem with my group in Oklahoma City. I felt I spent—and I think this is a major problem—a good deal of my time and that of my staff going back and forth just getting an understanding of what the people are doing in the job and what we should be doing in concert and harmony.

Mr. LAIRD. Do you feel there are certain pluses, though, as far as having a Center like this outside of the Washington area?

Dr. GODDARD. There were in the instance that I cited. The major plus was that the subjects we needed for our studies had to come to Oklahoma City for their training. I think one has to examine the purposes for which you are establishing a Federal station. We have this——

LOCATION OF CDC IN ATLANTA

Mr. LAIRD. CDC is an entirely different problem. I am talking about CDC now.

Dr. GODDARD. Historically, CDC did develop in Atlanta through the old malaria control program. The malaria problem was located in the Southern States, so it was entirely logical to locate CDC in Atlanta.

Mr. LAIRD. As I go over the budget, malaria control is now a very small, insignificant part of this particular activity in Atlanta.

Dr. GODDARD. Yes, sir; I am simply pointing out the original rationale for the location of what then became CDC in Atlanta; and since then we have gone into other areas.

Mr. LAIRD. Now you are making grants to States and working with the States on a wide variety of public health problems?

Dr. GODDARD. Yes, sir; we work with all of the State health departments. We are a national facility and do carry out our daily work through the regional officers, those tasks that relate to State assistance and State consultation.

Mr. LAIRD. As far as communications with the States, would it help you to be in Washington?

Dr. GODDARD. On that point I can't say that it would make much difference as to where we would locate, Washington or Atlanta.

Mr. LAIRD. Well, we are really moving in this area toward greater decentralization, as far as communicable-disease activities are concerned.

Dr. GODDARD. I can't say that——

Mr. LAIRD. More of the responsibility has been given to you.

Dr. GODDARD. In that sense, specifically referring to the administration of research-grants activity, yes. But as far as decentralization of communicable-disease-control activities, I think it is fairly much the same as it has been.

Mr. LAIRD. It is all being centralized in Atlanta?

Dr. GODDARD. No, sir; I don't mean that. We have a number of field stations. I might mention that one of the first things I did after taking over as Chief of CDC was to visit these field stations, and a very general expression which was made as I went from station to station was, "Gosh, this is a good thing; we wish you could spend more time visiting with us."

It is a thing I would feel I would benefit from if I could spend more time. There are demands on my time and Dr. Donaldson's time that often preclude visiting these stations. This gets down to a question of how you use your executive talent.

SIMILARITY OF CDC AND CHILDREN'S BUREAU VACCINATION PROGRAMS

Mr. LAIRD. In this immunization program, the Children's Bureau is taking care of school-age children and you are going to go into the area below 5?

Dr. GODDARD. Yes, sir.

Mr. LAIRD. Wouldn't it be better to have both parts of this program together?

Dr. GODDARD. As Dr. Christensen indicated, there have been a number of discussions with Children's Bureau and I think I can safely say they are in complete sympathy and accord with how we propose to administer the program. Reaching children under 5 involves different mechanisms and different groups and different approaches than reaching school-age children.

Mr. LAIRD. But you are not reaching these children, yourself. You are doing it through the State health departments.

Dr. GODDARD. Right.

Mr. LAIRD. And instead of having the Children's Bureau contact the State health department and you contact the State health department, why can't this be done by one Federal agency?

Dr. GODDARD. A hypothetical question, I suppose it could be done, but it fits more closely with our entire program of control of communicable diseases.

Mr. LAIRD. Maybe the program for those over the age of five should be in your hands, then.

Dr. GODDARD. I couldn't make a judgment on that, sir. I haven't any firm opinion on that. I think they have demonstrated that they have been doing a good job. They have established relations with the school organizations involved and——

Mr. LAIRD. The problem here, though, is that you are coming here for additional employees and the Children's Bureau needs additional employees according to the budget. It seems to me that the two parts of this program are so similar that it all could be done by either the Children's Bureau or by the Communicable Disease Center instead of having both doing it. I really cannot see much difference between the program for those below five and those above five.

Mr. KELLY. Could I comment on that since it affects the two parts of the department, Mr. Laird? I think you can make a case for arguing which health programs should be associated with the Children's Bureau and which should be associated with the Public Health Service because you have the problem of an organization related to a particular population group in an agency that is also organized in terms of functions of health, education, and welfare. So this is a disputable thing in any one case.

I do think, as Dr. Goddard said, we have a going program of health services to children through school systems that is partially supported by the Children's Bureau and there has been no occasion to feel that there was a need for a change or that a change was desirable.

On the other hand, we had what I think was a successful operation in the poliomyelitis program which was operated by the Public Health Service.

Mr. LAIRD. This wasn't divided?

Mr. KELLY. It was a crash program of this kind. It was a short crash program which they operated and the Congress decided on the basis of the President's recommendation to do the same thing with this program. The authority for the program is included in the Public Health Service Act and the responsibility is placed by the Congress on the Surgeon General for its performance. This was in accord with the President's recommendation and we think it a sound one.

Mr. LAIRD. I wonder if the President knew you had this other program going on?

Mr. KELLY. I presume he did.

OVERLAP BETWEEN CHILDREN'S BUREAU AND VOCATIONAL REHABILITATION

Mr. LAIRD. This isn't the only program that is divided like this. As I go through these justifications I see that you have an open-heart surgery program going on in the Children's Bureau, and one in the Vocational Rehabilitation Administration. I don't know—perhaps the Public Health Service has an open-heart surgery program going on, too, although I didn't find it in the justifications.

Do you?

Dr. GODDARD. I don't know.

Mr. KELLY. Only from the research point of view.

Certainly the example that you use of the Children's Bureau and the Vocational Rehabilitation Administration doesn't constitute an overlap. Both agencies support a provisional service. In the case of the Vocational Rehabilitation Administration, they provide support for services to disabled adults that are susceptible. They cannot provide this service to children.

Mr. LAIRD. They overlap in the period between 18 and 21 years of age. If you will check the regulations, you will find they both have this program for the age group 18 to 21.

I had a case in this area between 18 and 21 and finally had to go through both agencies. It is just a question of who happened to have the most money at the time. The case was taken care of.

Mr. KELLY. I don't think you can have duplication. We only operate on them once.

NEED FOR GREATER PRODUCTIVITY

Mr. LAIRD. The President has talked a great deal about encouraging the productivity of Government workers and I think one way of getting productivity increases is to eliminate programs that are overlapping or duplicating, because you do not get productivity increases by having two divisions in the same particular kind of work when with just a little more effort one agency could do the job.

Mr. KELLY. Mr. Laird, I think the point you are making is well taken. It may be necessary and desirable to have them in two places. But we should be sure they are well coordinated.

It seems to me that the Secretary has requested that some staff be made available—some professional staff in my office—for purposes of making an operational analysis of just the kind of problem you are talking about. Had the office been staffed to make the kind of evaluation of the kind of problems that you speak of, I think, with with respect to your question, that we should be able to give you a report showing that we not only are knowledgeable of the problem, but that we have explored it. We could also include the reasons that led us to the conclusions reached, but I must say we have to handle this thing from the top of our head because we do not have that kind of an analytical staff.

Mr. Laird. That is all I have.

Mr. Fogarty. I have just one more question.

Training Epidemiologists

A few years ago in a visit to Atlanta Dr. Langmuir talked about the shortage of personnel in his own particular field, epidemiology. That is not a very attractive name to many people. Many people do not know what epidemiologists are. But when this encephalitis outbreak came in Rhode Island he did come up with three or four young people—I assume they came out of Atlanta.

Dr. Goddard. They came from Communicable Disease Center.

Mr. Fogarty. Three or four of the brightest young fellows I have seen in this area, and at that time he was also talking about the shortage of personnel in this area. What are you doing about it? Are you doing anything about it? Have you any plan to train more epidemiologists?

Dr. Goddard. We are greatly concerned about the national supply of epidemiologists. I would estimate that we are 200 short of what we need, as a nation, for our ongoing programs, at the State and community level and within the Communicable Disease Center and within the Public Health Service.

Through Dr. Langmuir's leadership—and he is one of the outstanding epidemiologists in the world today—we have a program where young medical officers who have to serve 2 years obligatory service in the uniformed services come into the Communicable Disease Center and receive intensive training in the principles of epidemiology over a period of approximately 6 weeks. These men are then placed in our EIS service, Epidemic Intelligence Service, and a number are loaned to the States where they can be used in favorable settings for the actual handling of epidemiological problems in that site and nearby States. Some are placed in hospitals for studying the epidemiology of staphylococcal infections and other hospital-centered problems, and about 30 to 40 percent of these individuals are retained on our staff in the epidemiology branch at the Center.

Through Dr. Langmuir's reputation and by word of mouth, the young men spreading the word back to the institutions they came from, we are in the favorable position of being able to recruit without actually lifting a finger. They apply early in the year for positions as EIS officers. Unfortunately, we can't take all the ones that do apply and must reject a significant percentage of them.

So part of our program is the EIS service and about 50 percent of these individuals stay in some form of public health. Since the program started in 1951, 249 persons have been trained and served as EIS officers. About half of those individuals today are still in the field of public health, either in medical schools, in departments of preventive medicine, State health departments, local health departments, or in service with the Public Health Service. About 15 to 20 percent of these individuals do make a career of public health.

Now, for those who choose a career, we provide advanced training through our career development program and they receive 3 years of training which qualifies them to handle more complex, more difficult problems and direct the activities which involve the younger, less well-qualified officers that we have been able to attract.

Mr. **Fogarty.** In a layman's language, give me the definition of an epidemiologist.

Dr. **Goddard.** This comes from the Greek epi, upon; demos, the people; ology, the study of. So it is the study of those things that come upon the people. And certainly epidemics or communicable diseases do come upon the people and unfortunately, all too often. It is a basic science and one we feel is an excellent introduction to almost every phase of our activity. We wish we had more epidemiologists.

Mr. **Fogarty.** What do you mean? Wish you had more epidemiologists?

Dr. **Goddard.** More of these individuals. I wish we could bring more of these individuals in and train them as epidemiologists and make them available.

Mr. **Fogarty.** Why don't you?

BUDGETARY LIMITATION ON TRAINING

Dr. **Goddard.** Well, partly a budgetary limitation, sir.

Mr. **Fogarty.** What did you ask for in this area?

Dr. **Goddard.** I will have to check that. $651,000.

Mr. **Fogarty.** And what did the Department allow?

Dr. **Goddard.** $420,000.

Mr. **Fogarty.** The Department cut you that much?

Dr. **Goddard.** They cut us $231,000.

Mr. **Fogarty.** What did the Bureau of the Budget do?

Dr. **Goddard.** The Bureau of the Budget didn't cut that any further.

Mr. **Fogarty.** They couldn't cut much after you got cut about 35 percent. Couldn't you sell the Department on this?

Dr. **Goddard.** Well, let me put it this way. Any budget justification starting with our section chiefs—section chiefs have men who are working in one specific field. They tell the section chief what they need and he has to take into account the available space and how much of a program can be accomplished and he makes some adjustments, and this goes to his branch chief. The branch chief has other factors to consider and he makes some adjustments. And I have to take into consideration such things as whether the States can absorb these programs.

Mr. **Fogarty.** This is your figure, $651,000?

Dr. **Goddard.** Yes.

Mr. **Fogarty.** You took all the factors into consideration, and you could use the funds economically and well if you were allowed this additional amount?

Dr. Goddard. Yes, sir; I am simply pointing out that the Department has the same problems we have. I am very sympathetic with them.

Mr. Fogarty. I know, but sometimes our committee thinks the Department is too conservative in these areas. We have expressed ourselves in the past and hope we will in the future.

Can you give us a breakdown of how many additional epidemiologists could be trained under your original request.

Dr. Goddard. I would be happy to.

Mr. Fogarty. And what they would be assigned to.

Dr. Goddard. Yes.

(The information follows:)

The original justification requested funds to support 15 additional Epidemic Intelligence Service officers. These officers would have been used in the field evaluation of new vaccines, expanded investigations of food-borne (Salmonella) outbreaks, intensified studies of institutionally acquired infections and more comprehensive surveillance of hepatitis.

Mr. Fogarty. Is there anything else you would like to say before we recess?

Dr. Goddard. No, sir; I would just add one general comment, that I have never worked in an area of public health as exciting and interesting and as rewarding as this field of communicable diseases. I am very impressed by the excellent staff that has been gathered together and their devotion and conscientiousness.

BUILDING EXPANSION

Mr. Fogarty. You are still planning to build another building?

Dr. Goddard. Yes, sir.

Mr. Fogarty. Are you going to go up in the air?

Dr. Goddard. Laterally add to the building, sir.

It will go out for bids within a month, I would say.

Dr. Donaldson. The plans are in the hands of the Public Buildings Administration.

Mr. Fogarty. We appropriated the funds for 1963, so you are all set.

Dr. Goddard. Yes, sir.

Mr. Fogarty. Do you think it will be big enough when you get it built? Of course, Congress was at fault to some extent on the original one. We kicked this thing around for 8 or 9 years. It should have been built 10 years before it was built. Do you still have those animals in that firetrap we visited?

Dr. Goddard. Yes, sir.

Mr. Fogarty. Those old wooden shacks?

Dr. Goddard. Yes, sir.

Mr. Fogarty. An old Army post.

Dr. Goddard. Back to World War I, as I recall it.

Mr. Fogarty. I do not think they have spent much money on fireproofing them; have they?

Dr. Goddard. No, sir; not at all. This past winter, in addition, has been a very difficult one, the cold winter we have had. We have had as many as 112 pipe breaks in 1 week to contend with. It has really overloaded our maintenance force.

Mr. Fogarty. How is the food in the new building?

Dr. GODDARD. Excellent. We feel very fortunate to have a good concern providing food.

Mr. FOGARTY. You could not say that a few years ago.

Dr. DONALDSON. Our Center cafeteria provides the food for Chamblee, sir.

Mr. FOGARTY. Thank you very much.

TUESDAY, MARCH 5, 1963.

COMMUNITY HEALTH PRACTICE AND RESEARCH

WITNESSES

DR. PAUL Q. PETERSON, CHIEF, DIVISION OF COMMUNITY HEALTH SERVICES

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

SAUL R. ROSOFF, EXECUTIVE OFFICER, DIVISION OF COMMUNITY HEALTH SERVICES

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	1,412	2,131	2,063
	Positions other than permanent	10	42	42
	Other personnel compensation	4	1	13
	Total personnel compensation	1,425	2,174	2,117
12	Personnel benefits	156	235	256
21	Travel and transportation of persons	156	265	282
22	Transportation of things	25	24	27
23	Rent, communications, and utilities	48	61	63
24	Printing and reproduction	25	46	53
25	Other services	31	118	110
	Services of other agencies	------------	------------	2
	Research contracts	13	30	110
	Payment to:			
	Bureau of State Services management fund	64	86	156
	National Institutes of Health management fund	25	32	37
26	Supplies and materials	21	33	42
31	Equipment	37	37	37
41	Grants, subsidies, and contributions	21,900	25,283	28,357
	Total obligations	23,927	28,421	31,648

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	234	321	289
Full-time equivalent of other positions	2	6	6
Average number of all employees	197	295	275
Number of employees at end of year	200	325	295
Average GS grade	7.3	7.6	7.8
Average GS salary	$6,404	$6,907	$6,939

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	1,897	2,413	2,792
(*b*) To States for general health	14,920	15,000	15,000
(*c*) For public health training	5,090	7,900	8,095
(*d*) Migrant health services			2,500
2. Research, training, and technical services	2,016	3,108	3,261
Total program costs, funded [1]	23,922	28,421	31,648
Change in selected resources [2]	5		
Total obligations	23,927	28,421	31,648
Financing:			
Comparative transfers from other accounts (−)	−1,985	−2,469	
Unobligated balance lapsing	389		
New obligational authority	22,331	25,952	31,648
New obligational authority:			
Appropriation	24,336	25,776	31,648
Transferred from "Salaries and expenses, Office of the Surgeon General" (42 U.S.C. 226)		187	
Transferred to (−)—			
"Chronic diseases and health of the aged" (75 Stat. 733–736)	−2,000		
"Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728)	−5	−11	
Appropriation (adjusted)	22,331	25,952	31,648

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[1] Includes capital outlay as follows: 1962, $25,000; 1963, $25,000; 1964, $30,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $29,000; 1962, $34,000; 1963, $34,000; 1964, $34,000.

GENERAL STATEMENT

Mr. FOGARTY. The meeting will come to order.

Dr. Peterson, are you going to justify the community health practice and research budget?

Dr. PETERSON. Yes, sir.

Mr. FOGARTY. We will place your full statement in the record.

(The statement referred to follows:)

Mr. Chairman and members of the committee, the Division of Community Health Services was established in November 1961 to stimulate and support the development of high-quality comprehensive services by the total health professional and institutional community, and for the total community of men, women, infants, and children—people on farms and in cities—people with good health and those facing all degrees of illness. Specialization, urban growth, and shifting social structures combine to require new governmental activities. The rationale for the Division's program is defined in terms of the problems which these rapidly changing forces create.

Modern medicine and present-day patterns of disease are complex. The categorical programs that serve persons with a particular disease or in a particular age group are not enough to meet modern needs. These programs must be meshed to make sure that services of high quality are available in sufficient quantity to meet all needs of preventive, curative, and restorative care. Categorical and general programs both depend on facilities, personnel, and mechanisms for getting service to people. Both rest on a common base of community resources. If both types of programs are to be successful communities must undertake to regroup functions, combining some tried and still useful ways of delivering and financing health services. Communities also must be helped to discontinue any approaches that are outmoded.

The Division of Community Health Services is dedicated to the difficult goal of comprehensive health care in all our communities. Our main approach is to increase the body of knowledge and the number of trained personnel so that communities can improve their planning, organization, administration, evaluation, and financing in the total field of medical care and public health administration. This we do through consultative services to public and private organizations involved in community health; through studies carried out by our own staff; through financing investigations of community health organizations; and through training grants to institutions of higher learning and to individual trainees.

MAJOR STAFF SHIFTS AND PROGRAM EXPANSION

Staff skilled in medical care administration and health economics were transferred from other units of the Public Health Service to form the nucleus for a cadre of personnel skilled in those areas. These expert personnel combine with others from the former Division of General Health Practices to give us a staff experienced in both medical and public health administration.

The 87th Congress enacted Public Law 692 in September 1962, authorizing an annual appropriation totaling a maximum of $3 million for the development of health and medical services to domestic agricultural migratory workers. The principal provision of this new law is for a new program of project grants to public and private nonprofit organizations. Although no grant funds have been made available as yet, operating funds appropriated for fiscal year 1963 have made possible the recruitment of staff to provide consultation on migrant health problems and planning for the use of grant funds for which we are requesting supplemental funds for 1963. We have already received requests for projects totaling $1 million from States, localities, and voluntary organizations. About 40 project applications have already been submitted. Before June 30, 1963, we expect to have 50 or 60 applications.

The budget includes funds for research grants in 1964 for the first time. These funds formerly budgeted by the National Institutes of Health are related to community health planning, organization, administration, and evaluation.

PROGRAM ACTIVITIES, 1963–64

The total 1964 budget request amounts to $31,648,000. This represents an increase of $1,726.600. The additional funds requested will be used primarily to increase our efforts in medical care administration and school health and to step up the new health program for migrant workers. I wish now to discuss the progress we have achieved in these areas under the 1963 appropriations and to give examples of further activities we expect to undertake.

IMPROVING COMMUNITY HEALTH ORGANIZATIONS

The substantial sums spent by health and welfare organizations for health purposes and the large number of persons who become dependent because of illness combine to demand close working relationships between the two kinds of agencies—at Federal, State, and local levels.

In 1962 the Bureau of Family Services collected, through the regional offices, information on cooperative activities of State health and welfare departments. In 1963 the Bureau of Family Services and the Public Health Service jointly assembled reports describing such activities at both State and local levels. Fortunately, in some of the States in which there is a separate department of mental health, they, too, submitted a report. In this second collection of actual experience, a number of administrators attested to growing awareness of the many ways in which State and local health and welfare agencies can do a better job together than they can alone. The Association of State and Territorial Health Officers at its most recent meeting formally endorsed such cooperation. In 1964, we plan—also with the Bureau of Family Services—to publish a report using a sample of the best examples and ones which show a wide variety of ways in which the three agencies can strengthen and improve State and local medical care programs. The report will be distributed widely both to public and private health and welfare agencies and to schools of public health, nursing, and social work for use in service and training programs.

In 1963, we undertook with the American Public Health Association a guide for local communities to use in the planning, development, and evaluation of personal health service programs. The emphasis in this guide is on the responsibility of communities and their official health agencies for overcoming the present fragmentation of health services, which leads to inefficiency and lessened quality of care. The guide will be completed in preliminary form, ready for testing in fiscal year 1964.

Also, with a community group in a metropolitan area, we are collecting detailed information on the planning, establishment, and operation of a communitywide comprehensive prepaid group practice service. This will be the first time that a step-by-step record has been kept of the birth, growth, and development of such an organization.

Another example is a study of the feasibility of developing a method to evaluate the quality of medical diagnosis and treatment carried out in the offices of private medical practitioners. Evaluation of quality of care in hospitals has received considerable attention by organizations such as the Joint Commission on Accreditation of Hospitals and the American College of Physicians. It is, of course, more difficult to design methods for evaluating quality of care in office practice where most physicians work as individuals rather than as members of an organized staff. A State society of internal medicine in a major State and a school of public health will undertake to determine whether it is possible to use physicians' office records for evaluating quality, and, if so, to outline techniques that may be appropriate. If the study is successful, the Division will then be in a position to undertake further development of a methodology which would be useful to professional and consumer groups alike.

As the field of navigation needs radar, so the health field needs a "sensing" device to measure quality and quantity of medical care needed and provided. Only with such measuring sticks will organized medicine be able to continue to improve the quality of care. We hope the above may be one such device.

Our staff in the fields of behavioral science and health education has made numerous contributions to community health services during the current year. Technical assistance was given to the Kentucky State Department of Health on educational approaches in a statewide medical care program. Two of our social scientists have been assigned to the Vermont Department of Health to conduct a study of patterns of rural health. Their findings will aid in determining the most effective ways of introducing health services to the rural community.

In health economics we have completed and published the "Source Book on Medical Care Financing and Utilization." This source book brings together a large amount of data on public and private expenditures for medical care hitherto available only in numerous separate publications. It thus becomes a program director's reference book, whether he is a provider of health services, an administrator of a third-party payment program, an educator in medical care and public health administration, or a director of research. Another report, now in press, analyzes the employee health benefit programs available to State employees in 13 States and Puerto Rico. Through this device, we hope to assist States to improve existing health benefit programs for State employees and to help additional States embark on such undertakings.

Health insurance in the United States has principally been aimed at hospital, medical, and surgical care. Recently, consumer groups have urged extension of coverage to such areas as psychiatric care, prescription drugs, and dental care. The Joint Commission on Mental Illness and Health strongly endorses voluntary health insurance for psychiatric care. Although a few demonstrations have been carried out, more data are needed as a basis for estimates of utilization and cost. Toward the objective we have, therefore, initiated a project to study a 7-year experience of persons who received psychiatric benefits under major medical insurance. This project will increase our skills in intelligently analyzing such data as well as provide information on the cost and utilization of psychiatric insurance benefits and provide a stimulant for further research in this area. The study will show use and cost of the psychiatric benefit and will also explore the relationship to supply factors, such as the number of psychiatric beds in general hospitals and the number of psychiatrists and parapsychiatric personnel in the study area.

Additional steps toward the goal of providing data on the utilization and costs of extended insurance coverage include an analysis of drug benefits in a comprehensive prepaid group practice program. The findings of this research will be published before the close of fiscal year 1963. In 1964, we expect to collect data which will shed light on the possibility of extended insurance benefits for various rural and urban populations, and to study the effect of coinsurance and deductible provisions.

Mr. Chairman, the increase in the direct operations section of the 1964 budget will be concentrated on activities in medical care and school health. A major part of this increase is directed toward changing school health programs—one of the oldest elements of traditional public health programs. The large number of school dropouts, juvenile delinquents, selective service rejectees, mentally retarded and mentally ill children and adolescents are symptoms of society's failure to realine existing programs to meet today's problems.

The time is long overdue for communities to appraise the economic significance, effectiveness, and efficiency of their school health programs. In 1964, we propose to start obtaining basic data for evaluating school health programs, including their relationships with the community's total health services and facilities. Information will be collected on the funds expended in various typical school health programs and the scope of services rendered. Facts will also be ascertained on the efficiency with which these resources are utilized in relation to the total community health program ; the location of the program (in the health department or board of education) ; the size of the school system ; the socioeconomic status of the community ; and the availability of prepaid medical care programs.

During 1964, we would expect to recruit the needed professional personnel and to initiate the preliminary phase of this important inquiry. On the basis of our findings, over the next few years, we expect to have ready guidelines and standards for school health programs geared to today's needs. These guides, which will be developed in cooperation with professional health and education associations, will be responsive to demands already received from administrators in health and education. They will be useful both to program administrators and in training programs for public health and education personnel.

GRANTS TO STATES FOR GENERAL HEALTH SERVICES

We propose that the formula grant to the States for general health services be held at the 1963 level of $15 million. These funds help State health agencies to provide the basic organization that puts health services to people into the community.

RESEARCH GRANTS

In 1964, we propose a budget of $2,792,000 for research grants, an increase of $379,000. This would permit us to continue support of more than 60 long-term studies begun in prior years, to start about 23 new projects and to meet the increased allowance for overhead costs in all projects.

The research supported through this Division is concerned with the resources, in terms of personnel and funds and mechanisms, which communities need to provide high quality services. It is concerned with the patterns of organization and delivery of services, and with the characteristics of the communities served. One study being supported, for example, seeks to measure the effects of home care on the health and economic status of a low-income population. Another study is developing and testing new methods of providing needed medical services to large groups of ambulatory patients.

TRAINING RESOURCES

We propose a 1964 budget of $8,095,000 in public health training grants and of $272,200 for operational costs of the training program. This is one of the programs through which the Public Health Service is attempting to meet the total health manpower shortage.

In 1964, an increase of $195,000 in public health traineeships is requested to permit participating schools to provide short-term training for about 600 more students than in 1963. This would raise the number of short-term trainees to about 1,900 in 1964. We propose to maintain our grants to schools of public health and project grants for public health training at the 1963 levels of $1,900,000 and $2 million, respectively.

In 1963, we started two new types of traineeship grants to institutions, the special purpose and short-term training grants. Because of acute personnel shortages, we must make maximum effective use of personnel already in the field, but they must have continuing education to enable them to adapt the knowledge they acquired in traditional programs to the needs of an era when chronic physical and mental illnesses and disability constitute the major health problems.

Short-term traineeship programs are intended to provide training in an academic setting which will bring professional health workers up to date in the fields of their program responsibilities. Grants will be awarded this year for short courses in a wide variety of subjects—medical care administration, health economics, and chronic disease control. Early experience with this type of traineeship indicates that the short courses are a good recruiting ground for students qualified for long-term training in those high priority fields.

The special purpose grants will support long-term academic training and are intended to increase the numbers of personnel with advanced training in the new fields I have just described as well as for talented young research workers in public health practice.

Legislation which authorizes traineeships for graduate and specialized training in public health requires that the Surgeon General call a conference broadly representative of the professional and training groups interested in and informed about training of professional public health personnel to assist him in an evaluation of the training program and in preparation of a report to the Congress. The first such conference was held in 1958. The second will be held during the third week of August 1963. At present, working committees are being formed and background materials prepared. We expect to have a report of the conference by late fall.

MIGRANT HEALTH

Our 1964 budget proposes the full authorization of $3 million for family health services to domestic agricultural migratory workers: $2,500,000 for project grants and $500,000 for direct operations.

Migrant families have the same medical needs as other people, yet they have less access to health care than others. In comparison with the low-income groups, they lack the public service afforded permanent residents. Present efforts to meet their needs are inadequate, uncoordinated, and wasteful.

The major objective of the new program is to support health projects that provide family clinics for preventive and curative care, scheduled at times and places that are truly accessible to migrant families, and with no residence requirement imposed. The Federal share would pay only part of the costs. Nursing services may be supported to provide first aid; give care on a regular basis; arrange referrals; and offer other health assistance. Health-oriented homemaker service could also be included in projects.

Secondary benefits include aid to improve sanitary conditions in labor camps, in the fields, and at rest stops between work locations, and health education programs to stimulate workers to adopt more healthful practices.

A broad group of public agencies and private nonprofit organizations are eligible to apply for project grants: State and local health departments, growers' associations, health and welfare councils, medical societies, and other groups interested in improving the health of migrant workers.

We attach high priority to carrying out the intent of the Congress by getting this new health program into full stride in 1964, especially since it is authorized for a limited period of 3 years. For this reason we have requested a supplemental appropriation of $1,500,000 for fiscal year 1963. This will enable us, after project applications have been approved, to make grants promptly to the organizations that have indicated their readiness to undertake projects as soon as funds are available.

Mr. FOGARTY. Go ahead.

ESTABLISHMENT OF DIVISION

Dr. PETERSON. Mr. Chairman and members of the committee, the Division of Community Health Services was established in November 1961 to stimulate and support the development of high quality comprehensive services by the total health professional and institutional community and for the total community.

One main approach is to increase the body of knowledge and the number of trained personnel so that communities can improve their planning, organization, administration, evaluation, and financing in the total field of medical care and public health administration. This we do through consultative services to public and private organizations; and through training grants to institutions of higher learning and to individual trainees.

The budget includes funds for research grants in 1964 for the first time. These funds, formerly budgeted by the National Institutes of Health, are related to community health planning, organization, administration, and evaluation.

PROGRAM ACTIVITIES 1963–64

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A major part of this increase is directed toward changing school health programs—one of the oldest elements of traditional public health programs. The large numbers of school dropouts, juvenile delinquents, selective service rejectees, mentally retarded and mentally ill children and adolescents are symptoms of society's failure to realine existing programs to meet today's problems. The time is long overdue for communities to appraise the economic significance, effectiveness, and efficiency of their school health programs. In 1964, we propose to start obtaining basic data for evaluating school health programs, including their relationships with the community's total health services and facilities.

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MIGRANT HEALTH

Our 1964 budget proposes the full authorization of $3 million for family health services to domestic agricultural migratory workers: $2,500,000 for project grants and $500,000 for direct operations.

The major objective of the new program is to support health projects that provide family clinics for preventive and curative care, scheduled at times and places that are truly accessible to migrant families, and with no residence requirement imposed. We attach high priority to carrying out the intent of the Congress by getting this new health program into full stride in 1964, especially since it is authorized for a limited period of 3 years.

Mr. Chairman, I shall be glad to answer any questions you may have about this program and the budget request.

Mr. FOGARTY. Thank you, Doctor.

INCREASE REQUESTED FOR 1964

The appropriation for 1963, for the activities covered by the 1964 budget, and including the $1,500,000 supplemental request, is $29,921,000 and the request for 1964 is $31,648,000, an increase of $1,727,000, and you are absorbing all your 1963 Pay Act?

Dr. PETERSON. Yes, sir.

SUPPLEMENTAL REQUEST FOR MIGRANT HEALTH SERVICES

Mr. FOGARTY. The supplemental request of $1,500,000 is for the newly authorized program of migrant health services. Will you tell us what the authorization is, what planning you have done to date, and what the program is and how the program will operate?

Dr. PETERSON. The $1,500,000 that is requested in the supplemental is to make is possible for us to award grants to States in which domestic migrant agricultural workers present a health problem. These funds will provide clinics for the migrant workers with the communities and States participating in the program. We have already been working with the States in which migrant workers do pose health problems of concern. We now have received from approximately 20 States applications for program support. These are being processed within the program so that as soon as funds are provided we will be in a position to activate these projects and have them ready to serve the health needs of the migrants for this crop season. This is the reason that we are making a special request for a supplemental and proceeded to do our best to encourage the submission of projects in the

States to prepare themselves to activate these projects immediately upon the availability of funds.

Mr. Fogarty. What is the authorization?

Dr. Peterson. The authorization is a total of $3 million.

Mr. Fogarty. What is the legislative authorization?

Dr. Peterson. It is section 310 of the Public Health Service Act.

Mr. Hambleton. It was passed last September—Public Law 87–692.

Mr. Fogarty. One of the Williams bills?

Dr. Peterson. That is correct.

STATES REQUESTING GRANTS FOR MIGRANT HEALTH

Mr. Fogarty. You say 20 States have signified their intention to participate. Will you put those 20 States in the record? What other States have not come up with any plan and use a lot of migrant help?

Dr. Peterson. We have as nearly as we can estimate probably about 10 States that have not yet come in where there are a significant number of migrant agricultural workers. However, in all candor, we have encouraged States where the major migrant health problem exists to submit applications. I will have to provide that for the record, Mr. Chairman.

Mr. Fogarty. All right.

(The information follows:)

Migrant Health

According to latest U.S. Department of Labor statistics, the following States have 3,000 or more domestic agricultural migratory workers at the peak of the crop season:

Arkansas
California [1]
Colorado [1]
Connecticut
Delaware
Florida [1]
Idaho [1]
Illinois [1]
Indiana [1]
Kansas
Louisiana
Maryland
Michigan [1]
Minnesota [1]
Missouri
Montana
Nebraska
New Jersey [1]
New York
North Carolina
North Dakota
Ohio [1]
Oklahoma
Oregon [1]
Pennsylvania [1]
South Carolina [1]
Texas [1]
Virginia
Washington [1]
Wisconsin

States with less than 3,000 domestic agricultural migratory workers from which applications have been received are: Iowa,[1] New Mexico,[1] and Wyoming.[1]

[1] States from which applications have been received.

ADVERSE EFFECTS IF SUPPLEMENTAL REFUSED

Mr. Fogarty. What will happen if you do not get the $1.5 million? How will it affect your 1964 budget?

Dr. Peterson. For this year, in addition to the reduction of $1.5 million in available funds, it will actually mean a curtailment of the program for the migrant health workers which will put us one crop season behind and since this has the 3-year authorization limitation, it would mean, in our opinion, very serious curtailment of the overall program. Other than that, it would not appreciably change our program because we do have funds that were provided this year for our basic staff in migrant health and they would continue their work in a limited way in the program. In 1964 we have already requested the full authorization.

CONTRIBUTIONS BY STATES

Mr. Fogarty. What are the States required to contribute to this program?

Dr. Peterson. There is no stipulated matching requirement, Mr. Chairman. In the projects that are in, however, we are finding the States are submitting evidence of more matching than we had anticipated.

For example, California has a State law under which they have for several years been appropriating funds to initiate health programs for migrant workers. New Jersey at the State and local level is putting in personnel in support of projects that they have submitted. So we have been quite encouraged with the evidence of the ability and willingness of the States to participate.

Mr. Fogarty. What about Rhode Island?

Dr. Peterson. We don't have an application in yet, sir.

Mr. Fogarty. They do not use many, anyway.

Dr. Peterson. I don't believe they do.

Mr. Fogarty. They have a few for apples and potatoes.

1964 INCREASE FOR MIGRANT HEALTH

Your largest increase requested for 1964 is in this field, an increase of $1 million in grants, and $257,000 and 22 positions in salaries and expenses. This is doubling the number of people working on this activity. Will you give us some detail regarding your plans for 1964?

Dr. Peterson. In 1964 we propose to complete the staffing within our central office, to make available nursing, and sanitary engineering competence, in addition to our medical capability that we have at the present time. The staffing of our regional offices—we have already been able to provide six migrant health specialists who can work on this problem. We want to complete this staffing activity. We also are looking forward to establishing the teams that will make it possible for us to follow the streams with professional personnel who can consult with the states and localities, at each of the stopover points, to assure the continuity of care so that we get a followthrough of service that has been initiated downstream.

Also, we are quite anxious to have the ability to assign personnel to States where special assistance is needed in meeting the migrant health problem. These personnel would work with the States to strengthen their internal operations so that they can handle this at the State level. They would be able to utilize project grants in their efforts and would have the assistance of our regional and central office staff.

TRANSFER TO MANAGEMENT FUND

Mr. Fogarty. Now, will you explain the reason for shifting $506,000 and 66 positions to the Office of the Bureau Chief?

What Bureau Chief are we talking about?

Mr. Hambleton. Mr. Chairman, Friday, when I mentioned the increases in the management fund about which you were inquiring, this particular transfer was one of the increases and is involved with carrying out the recommendations of a task force in the Surgeon General's Office which recommended that the 66 grant management positions in the Division of Community Health Services be transferred to the management fund and the cost is now distributed among all the divisions.

Mr. FOGARTY. What Bureau Chief are you talking about?

Mr. HAMBLETON. Dr. Christensen.

Mr. KELLY. It is the Bureau of State Services.

Dr. CHRISTENSEN. It is the Deputy Chief's Office of the Bureau of State Services and we carry the community health programs of the Bureau of States Services.

Mr. KELLY. We have a management fund for the Bureau of State Services and this is a transfer to that management fund; for purposes of accounting we have divided it into two sections, one dealing with environmental health and one dealing with community health, because we think it more clearly presents to you how we are using the funds. But it is a single management fund and a single authority, pending the enactment of legislation.

RESEARCH CONTRACTS

Mr. FOGARTY. I notice you have $30,000 for research contracts in 1963 and that jumps to $110,000 in 1964. Would you explain that?

Dr. PETERSON. Yes, sir.

These are operations in which we are attempting to pinpoint very specific problems in medical care administration, medical care economics, and community health.

An example of the sort of thing we are doing is a contract with the University of Pittsburgh to work with a State medical society to study the feasibility of using the individual practitioner's records as an evaluation tool for the quality of service and extent of service that is rendered to patients.

Mr. FOGARTY. Why could not that be done under a grant program?

Dr. PETERSON. It could be done under a grant. But frankly, we were anxious to do this initially as a contract in order to determine whether or not this procedure really is a feasible approach to this problem. We feel that within a matter of 18 months, we can come up with an answer. If it does appear that this is a feasible approach where a more intensive study over a longer period of time and in greater depth should be undertaken, then we would expect this to be done by a project grant.

RESEARCH GRANT PROGRAM

Mr. FOGARTY. The research grant program appears to be leveling off. You are asking for funds to finance 23 new grants in 1964, the same number of new grants as for 1963. I thought you would show some increase there. How many approvable applications do you think you will have? Do you expect to have approvable applications that you will not be able to fund?

Dr. PETERSON. We hope that we shall, Mr. Chairman. You realize, of course, that this will be the first year of operation under the new procedure where these will have been transferred from NIH to the

Division. In this transitional phase we feel that it is prudent for us to use good judgment.

Mr. Fogarty. You are going to do a better job in selectivity?

Dr. Peterson. It will be a little bit better, perhaps, because you will recall NIH has not had, to the same degree that we will have, the focus on the community health and medical economics area and concern that we have in this regard. Quite frankly, as I think Dr. Christensen pointed out to you this morning, one of the reasons that this move of grants from NIH to the Bureau has been looked upon with such enthusiasm is the opportunity for the programs to more directly involve themselves in the promotion, oversight, and surveillance of these applications, so that we get a more highly focused effort in these program areas.

Mr. Fogarty. Is there going to be any change in the advisory committees that pass on these applications in 1963 and 1964?

Dr. Peterson. At the present time there will be no change in the advisory committee structure and council review mechanism that I am aware of, sir.

Mr. Fogarty. Well, it just looks to me as though you are remaining kind of stagnant. You ought to have more new grants than this. People in the schools cannot be very enthusiastic about this new budget, are they?

Dr. Peterson. I am sure there will be some disappointment.

Mr. Fogarty. Do you have any approved applications you cannot finance this year?

Dr. Peterson. I am sorry, I am unable to answer that question. Mr. Rosoff, do you have that?

Dr. Christensen. The research grant program hasn't been transferred to the Division yet.

Dr. Peterson. May we put that in the record?

Mr. Fogarty. Yes.

(The information follows:)

The comparative transfer from NIH for 1963 provided for funding all projects in the community health area that were estimated would be approved.

RESEARCH RESULTS

Mr. Fogarty. Give us a few examples of worthwhile results from the projects that have been in operation for some time.

Dr. Peterson. We have some excellent examples of success that we have achieved in some of our projects. As you will recall, I think last year the committee suggested that there was concern that we had perhaps not gone as far as we should in the study of medical economics and financing and the utilization of services. During this year our medical economics branch has been able to conduct a study in this area and published just recently this document "Medical Care Financing and Utilization" which has found wide acceptance among people who are interested in having available to them the different systems that have been utilized in various types of financing.

Mr. Fogarty. This is something your people have done?

Dr. Peterson. Yes; something we have done.

Mr. Fogarty. Give us a couple of examples of the research grants that you have made.

Dr. PETERSON. In the research grants area, we have a project that has been underway in New York City which is determining the course of action underlying why certain individuals in families go to certain facilities for medical care. A followup interview sample of those receiving care for recent illnesses has been conducted and the types and sources of medical care received has been documented.

Mr. FOGARTY. After you get all that information, what are you going to do with it?

Dr. PETERSON. Out of this, it is our hope that this will permit us to know whether or not in similar communities or similar situations it is possible to organize health services for similar groups of people, according to patterns of prepaid group practice or of solo practice of physicians. We are also hopeful that by using these studies of record systems that are underway we will be able to assist groups that expect to set up prepaid plans through having available information of previous experience from other groups. Therefore, we can be of assistance to them in planning for their prepaid or organized group practice or solo practice.

Mr. FOGARTY. Do the insurance companies have any of these statistics?

Dr. PETERSON. The insurance companies have a great deal of statistics available that have been quite helpful on insurance premiums, and prepaid types of programs. However, when we get into the problem of how we organize, and how physicians organize themselves together in groups under prepaid arrangements or in groups of practice on a prepaid service basis, these data are not available to us from that source.

Mr. FOGARTY. What do you mean by physicians on a prepaid basis?

Dr. PETERSON. Groups such as the Kaiser Permanente Group, Health Insurance Plan of New York, where physicians group together and offer to beneficiaries a plan that is a service contract for home and office medical care.

GROUP PRACTICE

Mr. FOGARTY. Does not have anything to do with the physicians giving up individual practice as a general practitioner, moving to another city and three or four operating in the same office so that they can work an 8-hour day, or something like that?

Dr. PETERSON. This is an arrangement that is provided in some of these groups, especially in some of the smaller communities where groups of physicians have gone together in order to provide continuum of service and still make it possible for them to have free time and be with their families. This sort of arrangement has been quite helpful.

Mr. FOGARTY. Is it increasing throughout the country?

Dr. PETERSON. It is, in our opinion, growing slowly. Perhaps it is not being utilized to its full capacity. We are not at all certain, Mr. Chairman, that this is the answer to all of the problems. We have an interesting study that I hope will give us some leads as to what are the types of physicians that like to practice in groups and those that can't work in groups and seem to prefer solo practice.

Mr. FOGARTY. I thought someone said recently here at these hearings that the physician generally likes to maintain a solo practice.

TREND FOR PHYSICIANS TO SPECIALIZE

I have been asked a few times recently, what is going to happen to the general practitioner? General practitioners are going out of business. Everybody is specializing. What is the answer to that?

Dr. PETERSON. The general practitioner isn't going out of business. It is true that there are not as many general practitioners as we had a few years ago. For example, in 1931 there were about 120,000 general practitioners in this country. By 1962 this had dropped to just over 79,000. Fulltime specialists have gone from 16 percent of the total practicing profession in 1931 to approximately 50 percent last year. However, when you count the medical specialists in 1931, there are only 6,600, but by 1962 they had increased to nearly 42,000 in full-time specialty practice relating to medicine and pediatrics. So there is a changing pattern where the internist and pediatrician and those in the medical specialties are probably becoming the family physician. This may represent a more highly trained professional group in family practice, while the general practitioner, true enough, in actual numbers, and in the percentage of those who are in the total profession available for family practice has been reduced. This is a very serious problem of concern because I think most of the medical profession, and certainly those of us in the Public Health Service, feel that the family physician is a crucial element of medical practice.

Mr. FOGARTY. I have heard it three or four times recently, and I was wondering if there was any movement to encourage young doctors to go into general practice?

Dr. PETERSON. The general practitioners have made serious attempts, Mr. Chairman, to encourage more young physicians to enter general practice. The Academy of General Practice has a very attractive program that has been very highly successful in our opinion, in continuing education for members of their academy. In many States, medical societies have encouraged young men to go into general practice. This is not too successful, however, in terms of changing the trend that we are seeing.

Mr. FOGARTY. It seems when you go for a general physical checkup, your family doctor or general practitioner, many times ends up sending you to about four other physicians who are specializing in some particular area—the eyes, ears, heart, and so forth.

Dr. PETERSON. Of course, you know, this provides a very high quality of service which is again, of concern to us, and we are anxious to see it maintained.

Mr. FOGARTY. But very expensive.

Dr. PETERSON. That's true, too.

GENERAL ASSISTANCE GRANTS TO STATES

Mr. FOGARTY. With the steady increase in categorical grants to States, do you not think a good case could be made for gradually cutting down on grants to States for general health? You have $15 million for 1963 and you are asking for the same thing in 1964.

Dr. PETERSON. That's correct. I would feel that a weak case could be made as far as substituting categorical grants for the general assistance grant. However, in our work——

Mr. FOGARTY. You think what?

Dr. PETERSON. That a weak case could be made. I don't think a strong case could be made in this regard. In our work with States, and as we have analyzed the utilization of these grants over the past 2 years, we have found that these funds are supporting fundamental services in health. It is possible for States to use these funds for services that would not be possible under their State appropriations and authorizations, especially in areas where new functions are beginning to appear as a part of the public health mission. In this past year, where we asked the States to budget a percentage of these funds into new activities, we have seen that they moved in this regard, in a very wholesome manner. We have been quite pleased with the result and I think the States have also been pleased. This general grant appropriation provides us a tool, a mechanism in this regard that we do not feel would be available from a categorical grant-oriented program.

Mr. FOGARTY. The States do not like to be told what to do with these funds, but they never have refused funds because of the categorical grant.

Dr. PETERSON. No.

CONTROL OVER STATE USE OF GRANT FUNDS

Mr. FOGARTY. We have been told in the past that much depends upon who the health officer is. Many of them have ideas of what is the most important thing in that State and perhaps would not conform with your thinking at all, or with the amounts of grants in these various categories.

Dr. PETERSON. This is true. If he is a good State health officer he would have to have some——

Mr. FOGARTY. You really do not know how the money is being spent.

Dr. PETERSON. We are in much better shape than that.

Mr. FOGARTY. Well, we have had trouble finding out in the past.

PURPOSES OF GENERAL HEALTH GRANT FUND EXPENDITURES

Dr. PETERSON. Since there are questions on this subject, would you like an analysis of the allocation and use of the general grant funds?

Mr. FOGARTY. We will put them in the record.

(The information follows:)

Purposes for which Federal general health grant funds were expended, fiscal year 1962

Function	1962 expenditures	
	Amount	Percent
State services:		
Laboratory	$1,800,000	12.0
Administration [1]	1,700,000	11.3
Environmental sanitation	1,500,000	10.0
Occupational health	800,000	5.3
Training	800,000	5.3
Preventable disease control	800,000	5.3
Vital records and other statistics	600,000	4.0
Public health nursing	600,000	4.0
Health education	400,000	2.7
Local health administration	400,000	2.7
Chronic disease control	300,000	2.0
Food and drug control	100,000	0.7
Nutrition	100,000	0.7
Other	600,000	4.0
Local health services	4,500,000	30.0
Total	15,000,000	100.0

[1] Includes supportive services such as fiscal and personnel activities and centralized purchasing not allocated to individual programs.

The above table represents an analysis for fiscal year 1962 on a nationwide basis of the functions supported by the grants to States for general health. It is a composite of data which has been gathered and is available on a State-by-State basis. As is seen by the number of activities funded, these grants allow the State a degree of flexibility which enables support of a variety of basic health services. A great majority of the States use funds from these grants for support of local health services, so important to the actual delivery of services to people. It is at this very level that available tax resources are so scarce, and where financial help is greatly needed to provide health services.

Concerning fiscal year 1963, information is available which indicates that the States are taking advantage of the flexibility offered by the grants to States for general health to initiate new health services or expand existing services. Approximately $2 million has been identified for these purposes, with over 20 percent of that amount to be used to initiate new or expanded local health services. Other new or expanded health programs are in the areas of training, environmental health, and general laboratory services.

Grants to States for general health are instrumental in providing the means through which the existing and developing public health programs are delivered. They provide a resource for pioneering in and supporting the development of new programs and the extension of existing programs, depending on the local needs. They allow the exercise of State leadership and the undertaking and support of essential health programs as identified by each State, with shifts in support from one public health area to another as critical needs and the programs to meet them change. These grants place emphasis upon and provide support to the role of State and local health officials in identifying and dealing with the health problems most pertinent within their areas of responsibility.

IMPORTANCE OF GENERAL HEALTH GRANTS

Dr. Christensen. As far as the general health grants are concerned, we have always talked in terms of the Federal-State partnership arrangement when we are talking in terms of our program and we feel that there is real need for a support grant as well as a stimulatory grant which the general health grant can provide.

Now, as Dr. Peterson mentioned, this year we asked the States to identify 10 percent of their general health moneys for new activities and we were very much pleased when we found that they were developing new activities as a result. I think Dr. Peterson mentioned that the continued support phase of the general health grant is also an extremely important part of the total formula grant program that goes into the States. The categorical moneys that are provided are certainly fine and stimulating—they stimulate new programs in areas where there is a big demand. The general health grant in this program also provides for some new activities and may be within a local health department or a State health department and therefore we think that it is a very important grant to the State health department in the development of their overall program.

Mr. FOGARTY. Well, this goes back to what I said. This is the kind of grant they would like them all to be since they can spend the funds on about any phase of their program they decide to.

Dr. PETERSON. I might say, Mr. Chairman, that the Bureau has undertaken this year a study in considerable depth involving State health and State finance people as well as our central headquarters staff and regional representation, to study this program of formula grants, and I think that out of this will come improvements in terms of the management of these funds that would bear on the concerns that you have expressed. And we expect this study to be completed by the end of this fiscal year.

Dr. CHRISTENSEN. This is a study that Dr. Terry asked to be done that he referred to here the other day.

BROADENING SCHOOL HEALTH PROGRAM

Mr. FOGARTY. On page 176, you say that you will start a new activity in 1964 to broaden our school health program. How much is budgeted and what do you propose to do?

Dr. PETERSON. We propose to put into school health $120,000 of our increase for this year in order that we can begin to study school health as it relates to the total availability of health services within the community.

We have found on some present studies that there are communities spending as high as $14 per year per student on their school health services. There are other communities that are spending approximately 10 cents per student per year. We are anxious to find out within this broad span whether or not the lower costs are really serving the needs, and to what extent they are serving the school health requirements of the pupil. We also wish to find out whether the lower costs are so because they do not include some items which are supported from other community health resources, and whether the higher costs are so because they include the total services and total organization in support of the activity.

This type of review of these programs will be added to our present programs of working with the universities and in the teacher training institutions and departments of education in the States to assist the teachers in bringing and maintaining current health materials that can be a part of their teaching programs through the seminars in which we are participating with the States and the universities. On this basis we expect to begin to bring into the school health program a new focus and opportunity to establish a more reasonable and realistic set of priorities as to how these programs might serve the health needs of the children in the schools.

GRANTS TO SCHOOLS OF PUBLIC HEALTH

Mr. Fogarty. Your grants to schools of public health is $1,900,000 in 1963 and you are asking the same amount for 1964, is that right?

Dr. Peterson. Yes, sir.

Mr. Fogarty. Was that your original request, $1.9 million?

Dr. Peterson. No, sir, we asked for the full authorization.

Mr. Fogarty. How much?

Dr. Peterson. $2,500,000.

Mr. Fogarty. Who cut this back, the Department or the Bureau of the Budget?

Dr. Peterson. That was the Bureau of the Budget, sir.

Mr. Fogarty. They couldn't use it?

Dr. Peterson. Oh, yes, I am sure they could.

Mr. Fogarty. That was my understanding, that was a real minimum, $2½ million.

Your next National Conference on Public Health Training will be held in August. Where, in Washington?

Dr. Peterson. In the Washington area. Yes, sir.

Mr. Fogarty. How is the new school of public health going up in Harvard?

Dr. Peterson. The new building, sir?

Mr. Fogarty. That's in operation now; isn't it?

Dr. Peterson. I am not sure it is in full operation.

Dr. Christensen. I don't know whether it is. I think they dedicated one part of it. One building.

Dr. Terry. Don't say too much. Mr. Fogarty was there when they dedicated it.

Actually, as you know, they were pretty well equipped. The buildings were finished at the time we were there and quite well equipped to move ahead. I haven't been back since but I understand the program is in full operation both in the nutrition division and in the environmental health area in the school of public health.

REGIONAL STAFF

Mr. Fogarty. This year the Boston regional office became the ninth to be staffed with public health personnel.

Dr. Peterson. Yes, sir.

Mr. Fogarty. How many more to go?

Dr. Peterson. That's all.

Dr. Terry. For several years Mr. Fogarty, we ran our—in effect, our regional office for the regions 1 and 2, New England and New York area, from New York and only about a year and a half ago did we reestablish health personnel in the Boston office.

We are not yet fully staffed in that regional office from the standpoint of the various categorical programs. But we have moved along very well in that year and a half's time.

ANALYSIS OF MEDICAL MANPOWER

Mr. Fogarty. When was the last major analysis of medical manpower made?

Mr. PETERSON. The last major analysis was made by the Bane committee and reported in 1959 as a part of Physicians for Growing America. However, the American Medical Association, the American Osteopathic Association, and the Public Health Service maintain a running inventory of physicians—physician counts, distribution by geography and by specialty, that is kept up to date each year as a joint effort between the three organizations.

Mr. FOGARTY. Will you supply for the record the total figures in all areas of medical manpower.

(The information follows:)

Health manpower in selected occupations

	Number
Medical occupations:	
Physicians (M.D.)	[1,2] 259,000
Physicians (D.O.)	[1,2] 15,000
Administrators, hospital and medical programs	12,000
Dietitians and nutritionists	25,000
Educators, public health	1,000
Medical assistants (in physicians' offices)	80,000
Medical illustrators	500
Medical laboratory personnel:	
Medical technologists-technicians	68,000
Medical X-ray technologists-technicians	70,000
Medical record personnel:	
Medical record librarians	3,000
Medical record technicians	20,000
Opticians and optical laboratory mechanics	21,000
Optometrists	20,000
Pharmacists	[1,2] 124,000
Podiatrists	8,000
Psychologists, clinical	8,000
Rehabilitation counselors	2,000
Social workers:	
Medical social workers	4,500
Psychiatric social workers	7,200
Statisticians and analysts:	
Public health statisticians	2,000
Public health analysts	3,000
Therapists:	
Occupational therapists	8,000
Physical therapists	9,000
Speech and hearing therapists	7,000
Veterinarians	[1,2] 22,000
	799,200
Dental occupations:	
Dentists	[1,2] 104,000
Dental assistants (in dentists' offices)	82,500
Dental hygienists	12,500
Dental laboratory technicians	25,000
	224,000
Nursing occupations:	
Nurses, professional	[2] 550,000
Nurses, practical	[2] 225,000
Aids, orderlies, attendants	[2] 410,000
	[2] 1,185,000

See footnotes at end of table.

Health manpower in selected occupations—Continued

	Number
Environmental health occupations:	
Sanitary engineers	[2] 7,000
Sanitarians	[2] 11,000
Radiological health:	
Health physicists	800
Clinical radioisotope technicians	2,000
	20,800
Total	2,229,000

[1] Active and inactive. All other estimates are for active only.
[2] Mid-1962 data. All other estimates are for 1960.

Source: Estimates prepared by the Public Health Service, Division of Public Health Methods, March 1963.

Dr. PETERSON. As a matter of fact, information on the current status is in this copy of the "Health Manpower Source Book Series" which I have here. This was published by the Division of Public Health Methods of the Public Health Service in 1962 and contains data on specialists, on all the specialty classifications of physicians, and is evidence of the attempt of the Public Health Service to stay current with this very difficult problem.

TREND IN SHORTAGE OF MEDICAL MANPOWER

Mr. FOGARTY. Is it getting better or worse than indicated in the Bane report?

Dr. PETERSON. Actually, it is my feeling it is getting a little worse. We are continuing to fall behind. Our latest projection which has just been published indicates that by 1975, even though we include in our data the continued immigration of foreign-trained physicians at the rate of about 1,200 a year, plus anticipating all of the graduates from all of the new medical schools that we know about, the population-physician ratio will drop from about 140 per 100,000 down to about 135.

Mr. FOGARTY. The Bane report projection was to 1970, wasn't it, not 1975?

Dr. PETERSON. Yes, we have now run that on out to 1975.

Mr. FOGARTY. You can supply that for the record.

Dr. PETERSON. Yes, sir.

(The information follows:)

The following statement relative to data related to physician-population projections and practice is from the American Journal of Public Health, February 1963:

"A projection of physician manpower to 1975 shows that there will be a decline of the physician-population ratio from present levels despite the additions from new schools which are presently proposed and the immigration of foreign-educated physicians. The magnitude of this deficit is about 9,500 if calculated for M.D.'s alone. When both M.D. and D.O. data are combined the shortage approaches 11,000. The extent of our dependence on foreign-educated physicians who immigrate and become U.S. licentiates is indicated as nearly 20 percent of the annual number of new additions to the profession. The number of foreign physicians in training as interns and residents is approximately 25 percent of all such positions filled in 1960–61."

PHYSICIANS (M.D. AND D.O.)

Physician supply in 1975 based on number of graduates of U.S. medical and osteopathic schools at current planned growth

Year	Number of physicians (M.D. and D.O.) [1]	Physicians per 100,000 population [2]	Graduates of U.S. medical schools [3]	Graduates of U.S. osteopathic schools [3]	New licentiates graduated from Canadian and foreign schools [4]	Deaths among those in the profession [5]
1961	261,622	140.5	6,994	506	1,500	17,378
1962			7,178	457	1,400	
1963			7,270	475	1,300	
1964			7,288	475	1,200	
1965	280,287	141.0	7,288	475	1,200	23,849
1966			7,311	475	1,200	
1967			7,376	475	1,200	
1968			7,464	475	1,200	
1969			7,530	475	1,200	
1970	301,782	139.2	7,728	475	1,200	25,856
1971			7,858	475	1,200	
1972			7,968	475	1,200	
1973			7,990	475	1,200	
1974			8,000	475	1,200	
1975	323,845	135.9				

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[1] Physicians in 50 States and District of Columbia, Puerto Rico, and outlying U.S. areas based on 1961 punchcards supplied by AMA and AOA to PHS. Data as of midyear, excluding the June graduates. Includes Federal physicians.

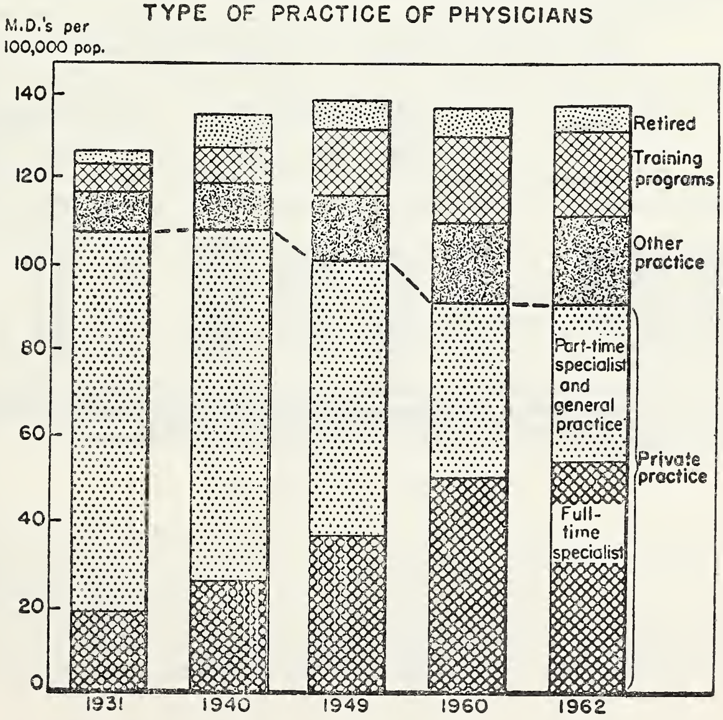
[2] Rates based on total population including Armed Forces outside United States. Thousands of persons as of July 1: 1961, 186,268; 1965, 198,836; 1970, 216,842; 1975, 238,264.

[3] 1961 graduates as published. Includes 6 osteopathic schools and 86 medical schools in operation in 1960–61. Number of medical schools to increase to 87 in 1962–63, 88 in 1963–64, 89 in 1965–66, 93 in 1966–67, and 94 thereafter.

[4] Licentiates graduated from Canadian schools estimated at 200 per year, with balance graduated from foreign facilities.

[5] Deaths computed on the basis of 1960 age-specific white male mortality applied to 5-year age groups for physicians living in 1961 and to single-year age distribution of recent graduates of U.S. schools and recent licentiates of Canadian and foreign schools as tabulated from the 1961 punchcards.

TYPE OF PRACTICE OF PHYSICIANS



Type of practice of physicians: Five selected years

Type of practice	1931	1940	1949	1960	1962
	Number of physicians				
Adjusted total	158,406	178,643	206,277	249,989	259,105
Private practice:					
Full-time specialists	22,158	33,667	54,891	91,291	99,595
Part-time specialists and general practitioners	112,116	109,272	95,526	74,553	70,471
Other full-time practice	10,951	14,031	22,712	34,002	38,989
Training programs	7,200	11,800	23,448	37,843	37,810
Retired, not in practice	5,981	9,873	9,700	12,300	12,240
	Percent of physicians				
Total	100.0	100.0	100.0	100.0	100.0
Private practice:					
Full-time specialists	14.0	18.8	26.6	36.5	38.4
Part-time specialists and general practitioners	70.8	61.2	46.3	29.8	27.2
Other full-time practice	6.9	7.9	11.0	13.6	15.1
Training programs	4.5	6.6	11.4	15.2	14.6
Retired, not in practice	3.8	5.5	4.7	4.9	4.7
	Physicians per 100,000 population				
Total	127.6	135.2	138.3	136.4	136.9
Private practice:					
Full-time specialists	17.9	25.5	36.8	49.8	52.6
Part-time specialists and general practitioners	90.3	82.7	64.1	40.7	37.2
Other full-time practice	8.8	10.6	15.2	18.6	20.6
Training programs	5.8	8.9	15.7	20.6	20.0
Retired, not in practice	4.8	7.5	6.5	6.7	6.5

Type of practice of physicians (M.D. and D.O.), 1962

Type of practice	Number of physicians			Percent of physicians		
	Total	M.D.	D.O.	Total	M.D.	D.O.
Estimated total	273,770	259,105	14,665	100.0	100.0	100.0
Private practice:						
Full-time specialists	100,845	99,595	1,250	36.8	38.4	8.5
Part-time specialists	14,851	12,682	2,169	5.4	4.9	14.8
General practitioners	64,548	57,789	6,759	23.6	22.3	46.1
Full-time manipulative therapy	1,192	0	1,192	.4	0	8.1
Other full-time practice [1]	39,521	38,989	532	14.5	15.1	3.6
Training programs [2]	38,625	37,810	815	14.1	14.6	5.6
Retired, not in practice	13,321	12,240	1,081	4.9	4.7	7.4
Practice not reported	867	0	867	.3	0	5.9

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[1] Includes non-Federal physicians in hospital, teaching, administration, research and preventive medicine, and Federal physicians in all types of practice other than training programs.

[2] Includes all interns and residents in training programs; see tables 1 to 3 for adjustment.

Type of specialty of physicians (M.D. and D.O.), 1962

Type of specialty	Number of physicians			Percent of physicians		
	Total	M.D.	D.O.	Total	M.D.	D.O.
Estimated total	273,770	259,105	[1] 14,665	100.0	100.0	100.0
Full-time specialists:						
Medical specialties	42,003	41,710	293	15.4	16.1	2.0
Surgical specialties	59,607	58,813	794	21.8	22.7	5.4
Psychiatry and neurology	12,415	12,378	37	4.5	4.8	.2
Other specialties	17,063	16,937	126	6.2	6.5	.9
Part-time specialists	15,068	12,899	2,169	5.5	5.0	14.8
General practitioners [2]	112,234	104,128	8,106	41.0	40.2	55.3
Full-time manipulative therapy	1,192	0	1,192	.4	0	8.1
Retired, not in practice	13,321	12,240	1,081	4.9	4.7	7.4
Practice not reported	867	0	867	.3	0	5.9

[1] Specialists are those in private practice only.
[2] Includes all interns and residents in training programs.

Mr. Fogarty. Mr. Denton?

DIVISIONS OF BUREAU OF STATE SERVICES

Mr. Denton. Doctor, does your division come in the Bureau of State Services?

Dr. Peterson. It is in the Bureau of State Services, Mr. Denton.

Mr. Denton. What are the other divisions in the Bureau of State Services?

Dr. Peterson. The other divisions in State Services—Dr. Christensen, would you like to answer that?

Mr. Denton. Are the ones on the list that I have here, Chronic Disease and Health of the Aged, Communicable Disease Activities, Community Health Practice and Research, Tuberculosis?

Dr. Christensen. The Divisions on the community health side of the Bureau of State Services are Accident Prevention; Chronic Diseases; Communicable Disease Center; Community Health Services; Dental Public Health and Resources; Nursing; and Hospital and Medical Facilities. On the environmental health side there is a radiological health division, water, air, environmental engineering, and occupational health.

Mr. Denton. Your budget this year is $31,648,000.

Dr. Peterson. That's correct.

Mr. Denton. And last year it was $25,776,000.

Dr. Peterson. $29 million, if we get the supplemental.

Yes, sir, that is correct.

Mr. Denton. Now, you intend to ask for a supplemental appropriation of $1,500,000 for migratory workers?

Dr. Peterson. That is correct.

APPROPRIATION TRANSFERS

Mr. Denton. And then a number of items are transferred to you. There is $187,000 transferred from the Surgeon General's Office. What does that embrace?

Dr. Peterson. Two years ago it was proposed that there be created within the Bureau of State Services a division that would combine the traditional public health administration responsibility of the

Public Health Service with those of medical economics and medical care administration.

This transfer was effected during this fiscal year in this item in the budget by the transfer of $187,000 plus 24 positions from the salaries and expenses appropriation in the Office of the Surgeon General where this had been carried as a staff responsibility in the Division of Public Health Methods. It has now been transferred to the Bureau where it becomes an operating program.

Mr. Denton. All right. Now, there are a number of other items that have been transferred to you from the NIH.

Dr. Peterson. That is correct.

Mr. Denton. And those, and the $1,500,000 and the $187,000 and the $25,776,000 makes $29,921,000 which means that you are increasing your appropriation by $1,726,600?

Dr. Peterson. That is correct.

Mr. Denton. Page 154 shows you had permanent positions of 321 in 1963 and you have 289 in 1964 which is a decrease of 32.

Full-time equivalent of all positions is six in each year. The average number of all employees was 295 in 1963 and 275 in 1964 which is a decrease of 20 and the number at the end of the year is 325 in 1963 and 295 in 1964, a decrease of 30.

So you show a decrease of employees all the way down the line. How is that possible?

Dr. Peterson. You will remember that we indicated that there was also a transfer of the grants management functions out of this Division to the Bureau and——

Mr. Denton. What Bureau?

Dr. Peterson. Bureau of State Services, where the grants management functions have been centralized at the Bureau level.

Prior to that time this activity had been housed in the Division of Community Health Services. This was transferred to the Bureau and 66 positions were transferred with it.

MIGRANT HEALTH SERVICES

Mr. Denton. So there is an increase of 32?

Dr. Peterson. Thirty-four.

Mr. Denton. Increase of 34, rather.

Dr. Peterson. Yes.

Mr. Denton. Why is that increase necessary?

Dr. Peterson. The major portion of this increase will go into migrant health activity where 22 positions will be assigned in order that we may put into the regional offices of the Public Health Service, the additional people that we need. It will also be possible for us to create medical, nursing, and engineering teams that will be able to move with the migrants in the three streams.

If it works the way we are hoping, we will be able to follow the workers and help to assure a continuity of service as they move from one location to another.

In addition to that, we are hopeful of assigning some professional people to the States in which the major migrant health problems are evident.

Mr. DENTON. From what I have seen of migratory workers I am sure this health service is necessary. But now I understand that in the supplemental you are asking for a million and a half.

Dr. PETERSON. That's correct.

Mr. DENTON. And in this budget you are asking for that million and a half and a million more?

Dr. PETERSON. That's correct.

Mr. DENTON. That $2\frac{1}{2}$ million will go for migratory workers.

Dr. PETERSON. That is correct.

Mr. DENTON. Also, you have $222,200 and 22 positions for extension of health service for these people.

Dr. PETERSON. The 22 positions and the $222,200 is a direct operation.

Two and a half million dollars is the money that will be awarded to States to establish and pay for the clinics, the sanitary services, and the other health facilities that are designed to serve the health needs of migrants. These are project grant funds.

Mr. DENTON. That is your principal increase.

Dr. PETERSON. That's correct.

TRANSFER OF ACTIVITIES FROM NIH

Mr. DENTON. To go back to page 152 of the justifications, would you explain these transfers to your Department from NIH?

Dr. PETERSON. This is the transfer that has come to us as a result of our negotiation to place in the Division of Community Health Services those research grant functions that are related to our program. Our staff worked with the staff of the National Institutes of Health responsible for research grant programs and all of the grants that are active were reviewed. It was mutually agreed which of these projects should be transferred from NIH to our appropriation.

From NIH to us, that is.

Mr. FOGARTY. Might I interrupt? I meant to mention this this morning.

In our report last year we said:

> A rather significant amount of the funds included in the National Institutes of Health budget is actually transferred each year to the Bureau of State Services to finance programs administered by it. It appears to the committee that it would be more orderly and businesslike to have the funds budgeted in the appropriations for the organizational units administering the programs. The committee will expect that the budget for 1964 be prepared on this basis.

That is the main reason for all these transfers.

Mr. DENTON. Let me ask you. Are these grants that go to the NIH? Are these grants assigned to you from the NIH?

Dr. PETERSON. That's correct.

Mr. DENTON. How do these differ from the kind of work that NIH does?

Dr. PETERSON. Obviously these grants that are transferred differ in no regard from the function of support for research in this area that NIH has been conducting.

However, it has been determined on the basis of our experience at NIH and in the Bureau that these areas of research really do not fit as well to the mission of the National Institutes of Health where they are concerned much more in basic science areas than they are in these areas that are program concerns of our division.

Mr. Denton. Let's take one, National Heart Institute, $163,000.

Just what kind of a grant would you make there?

Dr. Peterson. This probably was a grant that was transferred to us that was dealing in the area of the organization of services at the community level for perhaps rheumatic heart disease.

It might have been for stroke patients or for some other type of cardiac cases where the primary focus of this particular piece of research was how you organize a service in order to bring medical care to the people with this type of a disability.

Mr. Denton. This is not research in the usual sense, then, but it is to help organize local communities to do the work dealing with rheumatic hearts.

Dr. Peterson. That is correct.

Dr. Terry. Mr. Denton, if I may make an observation here.

One should think in terms of the research supported through the National Institutes of Health as being directed toward gathering basic information as compared to the research which is conducted through the Bureau of State Services which relates to the application of newly acquired information to the practice of medicine and the delivery of medical service.

In other words, one is the acquisition of knowledge basically and the other is the application of systems mechanisms of applying this new knowledge to the population.

Mr. Denton. One is basic research and the other is applied research.

Dr. Terry. Yes, sir; you can say it better than I can.

PROCEDURE FOR MAKING GRANTS

Mr. Denton. Another thing, how do you make these grants?

Does the NIH do it or do you?

Dr. Peterson. These will be processed through the grant award review and approval system that is at NIH, the study sections and council. The differences in this, insofar as our Division is concerned is that whereas prior to this time we had no function in terms of identifying and encouraging the prospective investigators to do this type of research, we now have a staff function to do this particular thing. We have now established within the Division a Research Grants Branch that is responsible for the audit of these applications as they come in, as they are processed through NIH, as they are finally funded and as they make the reports that are necessary to follow their progress.

Mr. Denton. About half the money, $15 million, goes to the States?

Dr. Peterson. That's correct.

Mr. Denton. What kind of formula do you have to distribute that?

Mr. Hambleton. That is distributed on the basis of population, weighted by an index of financial need—95 percent is based on population weighted by the index of financial need and 5 percent based on population density.

LOCATION AND DUTIES OF STAFF

Mr. DENTON. You have 289 employees which you expect this year. How many of them are Public Health officials or doctors and how many of them are clerical help?

Dr. PETERSON. We have that here.

Of this number, 146 professional of which 40 are physicians. Also there are 143 in the nonprofessional group.

Mr. DENTON. How many in Washington and how many out in the field?

Dr. PETERSON. 172 are in headquarters and 117 in the field.

Mr. DENTON. Where is your office here in Washington?

Dr. PETERSON. At the HEW south building.

Mr. DENTON. Just what do these 172 do here in Washington?

Dr. PETERSON. These are people who are in charge of our professional services. For example, we have physicians who are in public health administration, medical care administration, who are heading up the overall programs.

Mr. DENTON. Are they in intramural research?

Dr. PETERSON. Only very little research as individuals. Most of their effort, almost 100 percent, is the consultation and working with local and State health departments in the promotion, encouragement, and extension of their services.

Mr. DENTON. What do the regional men do?

Dr. PETERSON. The same thing in the regions as a continuing service, Mr. Denton. Obviously, those of us in the headquarters are not adequate in number to do all of the consultation and the travel that is indicated and we have found in the service through the years that our regional people can work much more closely with the States. Often, from headquarters we can provide to the region a specialist that they cannot or we could not justify putting in the regional office, and he can be called upon from headquarters in order to work on a particular problem.

Mr. DENTON. Now, the $15 million that you give to the States, what check do you make to see that it is used for public health services?

Dr. PETERSON. This money is awarded to the States on the basis of a State plan that the State health department develops, submits to the regional office and the regional office people with the State health people review the plan in terms of its falling within fiscal and program policy.

If this is approved, then funds are awarded and the post audit for program is conducted by the regional office people in consultation with the headquarters.

The fiscal audit is conducted by the General Accounting Office.

BUDGET INCREASES

Mr. DENTON. I would like to put page 155 of the justification in the record. That's all.

(The document follows:)

Summary of changes

1963 enacted appropriation	$25,776,000
Proposed supplemental for migrant health services	1,500,000
Comparative transfer from other accounts	2,469,000
Transfer from "Salaries and expenses, Office of Surgeon General"	187,000
Transfer to "Operating expenses, Public Buildings Service," General Services Administration	—10,600
Total estimated obligations, 1963	29,921,400
1964 estimated obligations	31,648,000
Total change	1,726,600
Increases	
(a) "Built in":	
1. Increased pay costs	56,500
2. 2 extra days' pay in 1964 (260 days in 1963; 262 days in 1964)	11,000
3. Annualization of 71 positions new in 1963	135,100
Subtotal	202,600
(b) Program increases:	
1. Increase in research grants	379,000
2. Increase in training grant program	195,000
3. Increase in migrant health grants	1,000,000
4. Expansion in research and development in medical care administration and public health administion (12 positions)	203,400
5. Expansion in health services for migrant workers (22 positions)	222,200
6. Increase in payment to "Bureau of State Services management fund"	63,000
Subtotal, program increase	2,062,600
Gross increase	2,265,200
(c) Decreases:	
1. Transfer of grants management activities to the Bureau of State Services management fund	—506,000
2. Nonrecurring program costs related to new positions authorized in 1963	—32,600
Subtotal, decreases	—538,600
Total net change requested	1,726,600

COMPARATIVE TRANSFERS AND BUDGET INCREASES

Mr. LESINSKI. Mr. Denton projected a question pretty much along the line I wished to question you on.

Your requests are roughly 6 million above—roughly 6 million above 1963, correct?

Dr. PETERSON. I think that is correct in the aggregate.

Mr. HAMBLETON. In considering the transfers.

Dr. PETERSON. In considering all of the transfers. But not in actual new dollars.

Mr. LESINSKI. Then the Public Health Service has $33 million, communicable disease got—Public Health got $33 million, communicable diseases got $20 million increase and you have really $69 million increase which is a duplication of the general research and services of the National Cancer Institute, mental health, National Heart Institute, arthritis, and allergy and neurology. They have all received increases—now in questioning you, you had mentioned that the Public Health Service had transferred funds to your Department which, of course, meritoriously so, was to implement the actual operation.

But what I am driving at is, why have these others asked for an increase when the work is transferred to you?

Dr. PETERSON. Well, there, they are asking for increases, I would assume in terms of their specific programs that they have as a continuing obligation of their Institute and of their division, without relation to those portions of the program that have been transferred and appear here. We have addressed ourselves to the increase that we would feel was a proper increase under the circumstances for this segment of the program.

Mr. KELLY. Mr. Lesinski, this table was prepared on the basis which treated each fiscal year on a comparable basis.

In other words, we made the necessary adjustments in 1963, so that those 1964 figures relate to the ongoing programs in those Institutes in 1963; only a small portion of their activities was transferred to the community health activities.

The major responsibilities for research and for the training of research personnel in the field of heart and cancer is still a responsibility of the NIH and those figures that you were reading represent the budget plan for the fulfilment of those large responsibilities.

Mr. LESINSKI. I am not arguing the question.

The point is, if in prior years you transferred funds to, say, the Community Health Services, $6 million—and then you go over here and have increases in every segment over 1963.

Mr. FOGARTY. Not much of an increase.

Mr. LESINSKI. Mr. Chairman, in the 3 years for the very same segments, there is $59 million total and here you have $119 million increase. That's a total of $173 million. If there is a transfer in prior years to the Public Health Service, communicable diseases, and so forth, why ask for an increase over here?

Mr. KELLY. All I wanted to say to you, Mr. Lesinski, is, that these NIH figures excluded the figures that you are now hearing here in Community Health Services.

When we get to NIH they will tell you why they feel it appropriate to make these increases here. It does not constitute in any sense a duplication nor a program that you can expect these witnesses to talk to.

Mr. LESINSKI. Actually the $6 million additional that you are talking about which you are going to use does not come to you, directly?

Dr. PETERSON. In 1964, beginning July 1, 1963, the funds that are indicated here would become available to this program because of lateral transfer of these projects and if Congress does take the action that is proposed in this budget, then we would begin to function at the first of the fiscal year in these research areas with the budget that is provided on the basis of transfer plus any additional that is awarded out of the request.

Mr. Lesinski. Could the 1964 request be cut $6 million then of the various agencies here?

Mr. Kelly. It already has been; sir.

Mr. Lesinski. Well, according to your request it is higher than last year.

Mr. Kelly. Oh, yes.

Dr. Terry. Mathematically, these transfers were added in as if his group was spending the money this year to make the figures comparable for next year when they will be spending it.

Actually, they are not spending it now.

Mr. Kelly. Maybe what I should say to you, the increases in NIH would have been greater had it not been for these transfers.

Mr. Lesinski. That's the point that I am driving at. So you actually got a total increase of $173 million in round figures.

Dr. Peterson. No.

Mr. Lesinski. All right. You add them up. I just took round figures.

In general, research figures, National Institutes of Health, Biology Institute, National Cancer Institute, Heart Institute, National Institutes of Dental Research, Metabolic Diseases, and activity, plus two others here, that increase there is $119 million.

Mr. Kelly. That's correct.

Mr. Lesinski. And you are doing the same thing with the increase of $6 million—not the same thing, but in the same field.

Dr. Peterson. No.

Mr. Kelly. There is not an increase here, Mr. Lesinski, of $6 million. There is $6 million worth of activities that have heretofore been carried on in the National Institutes of Health.

Mr. Lesinski. Yes.

Mr. Kelly. The increase in 1964 for these activities amounts to $1,500,000.

Mr. Hambleton. The National Institutes of Health reduced their 1963 base before they arrived at the increase that you are showing there of $119 million.

Mr. Kelly. I misstated what the increase is related to those items.

Mr. Hambleton. Only $2 million was transferred.

Mr. Kelly. Will the increases in 1964 amount to only $379,000 in this category?

Dr. Peterson. That is correct.

Mr. Lesinski. Wait a minute. I didn't total these up separately, so it is over $2 million, though.

Mr. Hambleton. $1,500,000 is reflected for the proposed supplemental for migrant health grants.

Mr. Lesinski. That is separate.

Mr. Hambleton. The other figures total $2,413,000 for research grants to be transferred. NIH decreased $2,413,000 out of their budget when we added them here.

Mr. Lesinski. That is going to reflect in a decrease of this figure here.

Mr. Kelly. Those figures which Mr. Hambleton is referring to have already been taken into account.

Dr. CHRISTENSEN. With the transfer of research grants to the community health side of the Bureau of State Services, there is transferred program responsibility in accord with the mission of the various divisions of the community health programs of the Bureau and NIH will not justify appropriations of moneys for this portion of the program activities that have been transferred down to community health. That is what we are justifying at the present time.

Mr. LESINSKI. What I am trying to comprehend in my mind, you are asking for these separate agencies here.

Why does NIH have the higher request for funds this year than in 1963?

Mr. KELLY. I think, Mr. Lesinski, the reason that they are higher is because, after consultation with the scientists at the National Institutes of Health and the identification of the extent of the disease and health problems, the capabilities for dealing with it, the number of ideas that are available and the number of researchers and institutes, it was concluded that the Federal Government could make an inroad into these problems by increasing them and the budget for NIH. The budget for the Public Health Service would not have been any different if we had decided not to effect this transfer in total or if we had decided to transfer on a program-by-program basis. Decisions were made which arrive at the totals of the Public Health Service.

Now, the distribution of that total among programs was done this year. Admittedly it is confusing. But in the long run we think we have accomplished something which will make it easier for the committee to consider the individual programs—how much money is required for them and how much money is being devoted to them.

Mr. LESINSKI. You point to the fact that you expect if you are transferring funds over to another department, that the department would act within reasonable justification in wanting their 1964 budget.

The increase here is 119 and you got roughly—I don't know what the exact figures are, 2 million here and there is the 20 million—half of that and another half of the 33; so there is a $20 million increase in the whole thing.

Mr. KELLY. I think it might be helpful, Mr. Lesinski, if I could put a statement in the record telling you exactly what the increase in NIH would have been had we not made the transfer because the increase is not as great as your calculation since certain of those items were not transferred and certain of them are not increases.

Let me give you a statement that would tell you what it would have been if we had made no transfers.

Mr. LESINSKI. I would appreciate that.

(The information follows:)

The NIH increase in 1964 over the 1963 operating level is $113,388,000. If the transfers to Community Health and Environmental Health had not been made the increase would be $117,886,000, a difference of $4,498,000.

INSTITUTE DIRECTORS' REQUEST FOR FUNDS

Mr. FOGARTY. Put in what the individual Institute directors requested for 1964.

(The information follows:)

The original Institute directors' estimates to the National Institutes of Health were as follows (adjusted to reflect transfers to community health and environmental health):

General research and services	$226,795,000
Biologics standards	4,767,000
Cancer	163,078,000
Mental	222,387,000
Heart	159,160,000
Dental	20,249,000
Arthritis	148,734,000
Allergy	98,106,000
Neurology	101,277,000
Total	1,144,553,000

Mr. FOGARTY. If we can spend $500 million more on medical research, I am for spending it so long as we have good projects to use the money for.

I don't make any bones about it.

Mr. LESINSKI. Dr. Peterson, in view of what you were talking about before, Mr. Chairman, the Doctor has—the Doctor doesn't testify against his fellow doctors so it is difficult to get a question out of them regarding another doctor.

FACTORS IN CAREER SELECTION

Isn't it true that the difficulty with general practitioners is that he has to work a lot harder than a specialist does for less money per patient, a specialist does less work and gets more money per patient.

Dr. PETERSON. I am sure there are some, and probably many, general practitioners that do not earn as much as many men who are specialists.

On the other hand, I am not sure at all that it is safe to assume that this is the major factor that determines whether or not an individual goes into general practice or whether he goes into a medical specialty for his career.

There are many other factors at play.

There are doctors sitting around the table here today who chose their careers quite deliberately to go into preventive medicine and into the Federal service, recognizing quite far in advance that in so doing we were not going to enjoy the economic benefits that some of our confreres who had chosen other careers might enjoy.

But on the basis of the professional desires that we had for our own contributions and our own professional interests, these decisions are made.

So I would hesitate to say, and I don't think it would be possible for us to justify a statement, that this is the single or the major issue that causes career decisions to be made by physicians.

I am sure that it is a factor in some instances.

Mr. LESINSKI. It definitely is a factor because that is why doctors go into specialist fields.

Isn't fluoride a poison?

Dr. PETERSON. Yes, sir.

Mr. LESINSKI. Then what may be the long run results of fluoride upon the kidneys of a human being?

Dr. PETERSON. If taken in toxic doses, it could cause effects in the body that would be detrimental to the health and well-being of the individual.

However, when taken in doses that have been determined as safe, there has been no evidence in all of the data that has been collected, which shows that there is any danger to the well-being of the person who uses this medication.

Mr. LESINSKI. None whatsoever?

Dr. PETERSON. None whatsoever, that I know of, when taken in the recommended dosage. The Public Health Service has studied this for 30 years, sir.

Mr. LESINSKI. You found no harmful results?

Dr. TERRY. When taken in the dose we have recommended, and there is a considerable spread between the dose recommended and what might be a toxic dose.

Mr. Lesinski, when you talk about anybody being poisoned, it depends on how much of it you take and under what circumstances.

Dr. TERRY. Ordinary table salt is poison if taken under certain circumstances. You recall the incident that happened up in New York, where, in a newborn babies, nursery, table salt instead of sugar was gotten into the formula for newborn infants, and quite a few died as a result of it.

The same thing is true of many of our others. I recall having been brought out here before you the other day, the most common medication responsible for poisoning is aspirin. This doesn't keep you from taking 5 or 10 grains of aspirin if you have a headache, but it doesn't, at the same time, recommend that you give 200 grains of aspirin to a small child, so that when we talk of toxic substances, it has to be related to the dosage and the circumstances and the size and so forth, of the individual.

Mr. LESINSKI. Well, aluminum is poisonous; still our pots are made of aluminum and although small amounts may get into the body, that doesn't bother us. I understand perfectly.

Dr. TERRY. In the 30 years of study in the Public Health Service, in anywhere near the dosage recommended for fluoridation of public drinking water, there has been no scientific evidence of harmful effect.

Mr. LESINSKI. Dr. Christensen, in regard to the exhaust fumes from automobiles that comes to air pollution, have you made a determination, or a recommendation, that anybody who drives a vehicle that discharges over a certain amount of carbon, should be taken off the road?

Dr. CHRISTENSEN. Mr. Lesinski, I think that this would be better answered by Dr. Anderson and Mr. MacKenzie. This is out of the area of responsibility that I have at the present time.

Dr. TERRY. Our group in the Division of Air Pollution Control will be up after this, and we have very detailed studies on it, and we would be glad to discuss it at that time. We would have the technical people here who would be capable of doing it, sir.

Mr. Lesinski. Thank you very much, Dr. Terry.

Mr. Fogarty. Mr. Michel?

Mr. Michel. No questions.

Mr. Denton. I have just one question.

Dr. Peterson. Yes, sir.

OBTAINING PHYSICIANS FOR AREAS OF SHORT SUPPLY

Mr. Denton. One thing that disturbs me very much is the inability to get doctors in certain communities. I am on another committee, where we have had a problem of getting doctors on a couple of islands. There is one place in the district I represent, where we have difficulty getting doctors.

Do you have any solution to that problem?

FELLOWSHIPS WITH FORGIVENESS FEATURES

Dr. Peterson. To be completely candid; no, sir. I do not. There have been a number of things that have been tried, with varying degrees of success, such as the awarding of fellowships, scholarships that have forgiveness features for practicing in certain areas that are in short supply. Dr. Terry recently made an assignment to a number of divisions in the Public Health Service, to study this problem and to make reports to him on it.

Mr. Denton. Before Dr. Terry answers that, in another place in my district, they had this fellowship program. The only difficulty is when the fellow got through medical school, they took him in the Army, and they wanted to know if there was not something they could do about that.

Dr. Peterson. There are a whole series of problems that relate to this question.

So that there are many factors that do come in.

Mr. Denton. On these two islands, where they have difficulty hiring doctors, they have, really, socialized medicine with no camouflage to it.

Dr. Peterson. I followed your problems on those islands with interest.

TRAINING MORE PHYSICIANS

Dr. Terry. Basically, Mr. Denton, I think the most constructive approach that we can have in this direction at the present time is the production of more physicians, and this is, of course, one reason we are so terribly interested in H.R. 12, which would be instrumental in this direction because we are going to get in more serious trouble every year. Now, there are lots of other factors.

Dr. Peterson. There is another issue to this, I think. That is the need, as Dr. Terry pointed out, of this country to create more well-trained doctors.

The second problem that we must face is the question of their continuing education so that they are kept up to date, and delivery of their services is assured at the highest level of performance that we can maintain.

The third is how do you organize the talents of other professional groups and technical people around the physician, so that his talent may be spread further in the delivery of health service. This is one of the problems that we are struggling with in the Bureau of State Services—whether or not you can place around the physician additional nursing capabilities, additional technical skill, such as Dr. Goddard was speaking to this morning, in the training of laboratory technicians, in making it possible for laboratories to do better and more definitive work.

It is possible for us to extend the arm of the physician to do a better job, and I think all of these must go together, as we approach this problem.

PROVIDING FACILITIES FOR PRACTICE

Dr. Terry. I think another point that should be added to this is the question of facilities in which to practice medicine.

Mr. Denton. Yes.

Dr. Terry. I think the Hill-Burton program has been very instrumental in helping us keep as many physicians as we have in the relatively small towns and more rural areas. I think that we have a proposal now before the Congress for loan assistance for the establishment of group practices. You will quite commonly find that when a group of physicians can go into an area, and get the professional satisfaction of being able to practice as a group, that they will be much happier practicing there than they would if they were individual physicians in relatively isolated circumstances.

So that I think anything we can do in terms of having better hospitals, better office-clinic buildings, and this sort of thing, to help the physicians in these areas, will tend to attract them to some extent but as Dr. Peterson has indicated to you, there is no one factor which is the answer to the whole problem and all of these factors come into play under certain circumstances in varying degrees.

Mr. Denton. Some communities just cannot afford a Hill-Burton hospital. They cannot afford a clinic.

Dr. Terry. Even though a community cannot, Mr. Denton, maybe a community 5 or 6 or 7 miles away, and in the other direction, another community the same distance away, maybe three or four communities in going together could come up with something. This has been found very successful in many areas in terms of regional areas rather than just having it in a specific town.

I am well acquainted with this problem because I was born and reared in a small town where my father was a general practitioner. After my father died and another physician came in there and left, the town went without a physician for many years. The closest physician was 11 miles away. Finally, the community, through local subscription from individuals and from tax moneys in the town, built a clinic building, which was a joint physician-dentist clinic building, in which they made this available with no rent for the first year or two after the physician came there, and then had low rent after that. They have been successful in holding a physician in that town since that time. This was the thing that attracted him. He had the facilities in which to work.

This is only one example. You will find many other instances where various mechanisms are used to attract physicians in, but with the modern, well-trained physician, one is going to have to have at least reasonably available to that physician—I mean, within a certain, reasonable distance—hospital facilities in which he can practice hospital practice as well as out-patient and home visit practice, and these are all factors that contribute to this very complicated problem, but I don't think we will ever get any movement toward a better distribution in this country until we get more physicians, and this is one reason that we are so strongly pushing to try to get aid for medical education in terms of being able to get kids who have the ability, and who would like to go to medical school, and giving them the chance to go by virtue of loans or scholarships or something of that nature.

Mr. Lesinski. Dr. Terry, on that point, which you are addressing to Dr. Peterson, in regard to specialists, well, the specialists will give you qualitative medical attention much more so than the general practitioner, in some specific disease, whatever it may be. On the other hand, specialists do tend to cut down on the volume that they may project.

Regarding your remarks to a clinic, my area has quite a few clinics. It does tend to promote better understanding between the doctors and patients. In other words, if you have a group of four or five doctors working at the clinic, they can consult among themselves, if need be, and actually, the results they get are a lot better.

Dr. Terry. I certainly endorse everything you said, Mr. Lesinski.

Mr. Fogarty. Mr. Michel?

State Medical Schools

Mr. Michel. Several weeks ago, Dr. Henry, president of the University of Illinois, was out here on a variety of problems, and I believe he said we had the third largest medical school in the country at Illinois.

Dr. Terry. It is one of the largest, in terms of enrollment; yes, sir.

Mr. Michel. He made a point that at the University of Illinois main campus, the medical school had gotten about as big as it could get and that he did not think it was wise to make the medical school any larger than it currently was.

Now, in keeping with the statement that you have made, about the need for more doctors, he presented this point, that we are producing a lot of doctors in Illinois, but one of our big problems is that they are leaving the State and going elsewhere, where the opportunities are.

Dr. Terry. Mr. Michel, there are two or three points here.

ESTABLISHING MEDICAL SCHOOL BRANCHES

In the first place, this may very well be. We are not certain today what the optimum size of the medical school is.

Mr. Michel, the thinking practiced by him, of our States in relation to State institutions, is not just to try to make a mammoth single medical school but to have several branches.

For instance, we are going through such a stage now in the State of Texas, where 20 years ago, 15 years ago, the State of Texas had only one State supported medical school. They now have two, and the legislature has authorized the establishment of a third branch. One is in Houston; one is in Dallas; and the third branch to be authorized is in San Antonio.

Now, there are many in addition. For instance, take in Chicago, to mention the Illinois situation, there are several opportunities within the State of Illinois and within the city of Chicago for the establishment of other medical schools, where much of the skeleton framework is already available. Take the Michael Rest Hospital for example. There is one that is contemplated. I think in many instances, we can expand medical schools.

On the other hand, in many instances, it is going to be more profitable to establish new medical schools, even though State supported, or however supported, in relation to other hospitals or other cities and getting better doctors.

PHYSICIANS PRACTICING IN STATES WHERE RECEIVING SCHOOLING

To get back to one other thing that you said about the physicians leaving. It still amounts to the fact that the latest survey which was done last year, showed that slightly over 50 percent of the physicians practicing in a State, graduating from schools within a State, were still practicing within that State and this was true throughout the United States; that the physicians who had graduated from medical schools within the State, a little more than 50 percent were still practicing within the State. So that there is a considerable hold on the people who are graduated from the local medical schools and regional medical schools.

Mr. FOGARTY. I don't know about the figures regarding the medical school, but in dentistry that wouldn't be true in Missouri, would it? At Washington University, in Missouri, they are coming in from other nearby States but people from Missouri are not going to the school in as large numbers. The major part of the enrollment, I have been told, is from out of the State.

Dr. TERRY. I think this is particularly true of our profit schools, like Washington University in St. Louis. You will find a much wider geographic spread of the students. On the other hand, take the University of Missouri Medical School at Columbia. You would find that predominantly, and almost exclusively, the students are from that State, because this is common practice within States, to give preference to student applicants from within the State.

Now, of course, Missouri, taking it as an example, is a lot more fortunate than a lot of States. It does have two good medical schools. There are a lot of States that don't have any.

Mr. MICHEL. It is not unique only in that area.

I just came from another subcommittee, and Missouri, of all the States in the Union, probably has the poorest record of any State for the establishment of a soil conservation system. You look at the map, and there is a big, white blot.

Mr. FOGARTY. I could not believe that so few people from Missouri were going to that dental school, but they are coming from practically every other State.

EDITORIAL ON MEDICAL STUDENT LOAN FUNDS OR SCHOLARSHIPS

I have a letter from the Association of American Medical Colleges, enclosing an editorial from the Journal of Medical Education of March 1963, "Medical Student Loan Funds or Scholarships?"

I will insert it in the record at this time.

(The documents follow:)

ASSOCIATION OF AMERICAN MEDICAL COLLEGES,
Evanston, Ill., February 26, 1963.

Hon. JOHN E. FOGARTY,
House of Representatives, Washington, D.C.

SIR: Due to the interest of the members of the House Committee on Interstate and Foreign Commerce in the financial problems of medical students, I thought you would be interested in an advance copy of an editorial by John A. D. Cooper, M.D., editor, the Journal of Medical Education, "Medical Student Loan Funds or Scholarships?" which will appear in the March 1963 issue. It seems to be that this editorial ably emphasizes the severity of the financial problem which confronts a large number of medical students.

Yours very truly,

ROBERT C. BERSON, M.D.,
Chairman, Committee on Federal Health Programs.

[Preprinted from the Journal of Medical Education, vol. 38, No. 3, March 1963]

EDITORIAL: MEDICAL STUDENT LOAN FUNDS OR SCHOLARSHIPS?

The financial plight of American medical students has been well documented in studies carried out by the AAMC over the past few years.[1] The seriousness of their situation is underlined by information released from the AMA on the utilization of its loan guarantee program. In the period between February and December 31, 1962, almost $10 million has been committed for loans by 2,890 medical students and 1,768 interns and residents. This far exceeds the anticipated demands for funds, and an urgent appeal has been made for additional contributions to guarantee additional loans.

Since these loans carry substantially higher interest rates than the usual academic loan funds, it seems certain that medical students exhausted other sources of support before turning to the AMA program. An annual interest rate of 5½ percent is charged on the money borrowed until repayment is started. At this time a sum equal to 3½ percent of the amount owed, multiplied by the years in the repayment period, is added to establish the total amount to be repaid monthly over a maximum term of 10 years. The add-on rate of 3½ percent per year is equivalent to 6⁸⁄₁₀ percent simple interest for a loan amortized in equal monthly installments over a period of 10 years.

Under the plan a student who received $1,000 per year during his 4 years of medical education, a total of $4,000, and then begins repayment after completing a year of internship and 3 years of residency, would be required to return $7,118.40 in equal monthly payments over the succeeding 10 years. The loan, which would probably cover little more than his tuition cost and somewhat less than one-third of the expenses for his medical education, would increase the already substantial outlay of money required to prepare himself for the profession by almost $3,120. It would prolong the costs of medical education far into his career.

To secure the number of physicians required to care for our expanding population and meet its demands for health care, more young people from families in lower income groups must be interested in and find it possible to undertake the long and costly preparation required. There are data indicating that almost half of our medical students come from families with incomes over $10,000 per year. These families only make up about 11 percent of the general population and supply less than a third of the bright students to colleges, as judged by studies on the National Merit Scholarship semifinalists. Medical schools have to rely on more than their share of eligible students from the high family income group. It is doubtful whether many students from families in the other 89 percent of the population will find loan funds an answer to their needs, especially since they probably finish college with a substantial amount of borrowing to repay. An adequate program of nonrepayable stipends could help bring students from less fortunate financial circumstances into medicine.

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[1] Whiting, J. F., Powers, L., and Darley, W., "the Financial Situation of the American Medical Student," J. Med. Educ., 36:745, 1961. Ceithaml, J., "Medical Student Loan Funds: Fiscal 1961," AAMC Multilith. June 1962. Patagrams, J. Med. Educ., 35:291, 449, 789, 1960.

Loan funds do not compete with the programs of fellowships and other types of nonrepayable stipends, largely from Federal sources, that provide substantial financial assistance for the rapidly increasing number of graduate students in the arts and sciences. Graduate students are a far smaller burden on their family budget and fewer find it necessary to incur indebtedness for their education. Those who are forced to supplement their other sources of income borrow far less than the corresponding group of medical students. Although there are obviously many factors that have brought about increased interest in graduate study, it is not difficult to imagine the feeling of relief that a family experiences when their son decides to become a physicist rather than a physician—especially if there are other children awaiting their chance for a college education and the financial resources of the family are not overly generous.

Although about half of the students studied by Whiting, Powers, & Darley felt that their medical education had been rough financially, only 2 percent indicated that this would tempt them to consider another career if they had an opportunity to do it over. However, these data do not furnish any information about the qualified and interested students who decided early, either consciously or unconsciously, against medicine as a career because of their concern about the funds necessary for the education and training of a physician. Many young people of high school age, not accustomed to dealing with sums of the magnitude involved, would probably be frightened by the prospects of having to borrow any substantial part of the money required to prepare themselves for medicine as a career.

More loan funds are probably not the entire solution for reducing the amount of work for pay carried on by medical students. The demands made by this important period of their overall educational span should leave little time for such activity. But most medical schools lack resources to provide the financial support that outside work furnishes and hence have been unwilling to exert much influence on this aspect of their students' efforts outside of the classroom or hospital ward.

Although the AMA program is a stopgap measure, it does not provide the final answer to a critical problem. The imbalance which already existed between nonrefundable stipends and loan funds available to medical students has been increased. Lee Powers has estimated that a minimum of $14 million per year in nonrepayable funds would be needed to obviate the necessity for student borrowing and paid externships as sources of financial support. To reduce the contribution from the family for the student's education and, therefore, to make it possible for those from lower income groups to consider medicine as a career additional funds would be required. A total sum of $20 million a year does no, seem an unreasonable estimate.—JOHN A. D. COOPER.

TUESDAY, MARCH 5, 1963.

CONTROL OF TUBERCULOSIS

WITNESSES

DR. EDWARD T. BLOMQUIST, CHIEF, TUBERCULOSIS BRANCH, COMMUNICABLE DISEASE CENTER

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

HARRY C. PEDIGO, PROGRAM MANAGEMENT OFFICER, TUBERCULOSIS BRANCH, COMMUNICABLE DISEASE CENTER

LELAND W. SMITH, FINANCIAL MANAGEMENT OFFICER, COMMUNICABLE DISEASE CENTER

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	1,150	1,144	1,177
Positions other than permanent	85	104	178
Other personnel compensation	20	19	28
Total personnel compensation	1,255	1,266	1,383
12 Personnel benefits	126	122	133
21 Travel and transportation of persons	163	158	160
22 Transportation of things	26	19	17
23 Rent, communications, and utilities	36	24	24
24 Printing and reproduction	9	9	9
25 Other services	340	377	378
Research contracts	183	183	183
Payment to Bureau of State Services management fund	80	65	58
26 Supplies and materials	152	66	66
31 Equipment	55	17	15
41 Grants, subsidies, and contributions	3,989	4,476	4,403
Total obligations	6,414	6,783	6,828

Personnel Summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	215	195	195
Full-time equivalent of other positions	14	17	29
Average number of all employees	200	196	208
Number of employees at end of year	199	233	250
Average GS grade	6.4	6.4	6.4
Average GS salary	$5,815	$6,107	$6,107

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) To States	3,499	3,250	2,500
(*b*) Project	496	1,250	2,006
2. Research, training, and technical services	2,246	2,426	2,322
Total program costs, funded [1]	6,241	6,926	6,828
Change in selected resources [2]	173	−143	
Total obligations	6,414	6,783	6,828
Financing:			
Comparative transfers to other accounts	40	210	
Unobligated balance lapsing	39		
New obligational authority (appropriation)	6,493	6,993	6,828

[1] Includes capital outlay as follows: 1962, $18,000; 1963, $47,000; 1964, $24,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $62,000 (1962 adjustments, $17,000); 1962, $252,000; 1963, $109,000; 1964, $109,000.

Mr. Fogarty. I think you are next, Dr. Blomquist.

Do you have a statement, Doctor?

Dr. Blomquist. Yes, sir.

General Statement

Dr. Blomquist. Mr. Chairman and members of the committee.

1964 PROGRAM

In 1964, the tuberculosis program will intensify the application of current measures of tuberculosis control.

First, we will continue to augment and improve services that will insure adequate, uninterrupted treatment and supervision of tuberculosis patients and their families. When of good quality, they insure that patients complete treatment, avert relapse, help identify and place under treatment family contacts who have active disease, and prevent development of disease in other family members.

Second, we will use the latest concepts of tuberculosis epidemiology.

Current formula and project grant programs are aimed at these basic activities. Formula grants will assist in funding needed basic services throughout the Nation. Project grants, which are being expanded, will be focused on high incidence areas.

Our proposed approach for next year is to make maximum use of existing resources by reorienting casefinding. Many communities now tuberculin test and X-ray. We will add to this effort by intensive followup of close contacts of young children who enter school and who are found to have a positive tuberculin reaction. By this, tuberculosis and the rate of infection in children could be dramatically reduced. As such efforts are successful, future generations could grow up free of infection.

NEED FOR TRAINING

To achieve success we need to train present and future professional tuberculosis workers. The program recognizes difficulties that professional people have in keeping up with knowledge about new treatment and laboratory methods. We are trying to overcome this by symposia and seminars for physicians and public health workers. A program is also being set up to provide intensive training for physicians, nurses, and other tuberculosis workers.

STEPS NECESSARY FOR TUBERCULOSIS CONTROL

Tuberculosis control must progress in four successive steps. These steps are: (1) adequate treatment for all known cases; (2) intensive casefinding; (3) identification of inadequately treated cases; and (4) identification of infected persons who are at special risk of disease.

The program we are proposing for 1964 for which we have requested $6,828,000 fits within these steps. Grant activities are aimed at step (1)—services to patients. When success is achieved in providing these services, energies can then be directed toward intensive casefinding. This and the coordinated tuberculin testing program of children entering school relate to step (2). Two areas of emphasis in our research program are studies on the effectiveness of prophylactic treatment of persons inadequately treated and the investigation of newer drugs. These relate to step (3). This needs further research development before becoming a part of established programs. Finally, the school testing program can eventually expand to identify children who are infected and are at high risk—part of step (4).

These are beginnings. Tuberculosis control work is prolonged and undramatic. When eradication occurs, however, tuberculosis—a disease that kills nearly 10,000 people a year, attacks 50,000 annually and brings months or years of disability, is a burden to our economy—that eventuality will indeed be dramatic.

Mr. Chairman, I shall be glad to answer any questions you may have, about this program and the budget request.

Mr. Fogarty. Thank you.

BUDGET REQUEST FOR 1964

Your appropriation for 1963 is $6,993,000. You are asking, for 1964, $6,828,000. Since it is proposed to transfer expenses amounting to $210,000 to the Communicable Disease Center, the net effect is an increase of $45,000.

Dr. Blomquist. Yes, sir.

Mr. Fogarty. But when you take into account that you will have absorbed all your pay act costs for 1963, most of the increase disappears? Won't the pay act costs come to more than $45,000?

Mr. Hambleton. $32,000.

Dr. Blomquist. $32,000.

Mr. Fogarty. On a full year basis?

Mr. Hambleton. The full year basis would be around $42,000.

Mr. Fogarty. So the level for 1964 is almost exactly the level we appropriated for 1963.

Mr. Hambleton. Yes.

Shift From Formula to Project Grants

Mr. Fogarty. The only change of significance in the budget is to reduce the formula grants to States from $3,250,000 to $2,500,000 and increase project grants from $1,250,000 to $2,006,000.

LETTER FROM CONGRESSMAN DADDARIO

I received a few letters from Members of Congress. One I happen to have here is, a letter from Congressman Daddario who says:

> I am bringing to your attention a letter from the State commissioner of health relating to the apportionment of tuberculosis research funds. I will be interested so know whether anything can be done to rectify this situation.
>
> Not only the State health department but the Connecticut Tuberculosis and Health Association has written to me to express its concern about the reduction reported in the proposed budget. The association has expressed its concern that grants would be reduced when the number of tuberculosis cases continues to increase. They feel that special projects grants could have a harmful effect on the Connecticut program.

That is from Emilio Q. Daddario, Member of Congress.

Now I will insert in the record the letter addressed to Congressman Daddario from Franklin M. Foote, M.D., commissioner.

(The letter follows:)

State of Connecticut,
State Department of Health,
Hartford, Conn., February 8, 1963.

Congressman Emilio Q. Daddario,
House Office Building, Washington, D.C.

Dear Congressman Daddario: Word has just reached us of the estimated allocations to Connecticut from the Department of Health, Education, and Welfare, Public Health Service, based on amounts recommended by the President in his budget message for fiscal year 1964.

Although we are gratified that Connecticut will receive slight increases for radiological health and cancer control, it is most distressing to learn that the recommended appropriation for formula grants which permit adequate latitude for developing the best possible tuberculosis control program in Connecticut is being reduced from $3,500,000 to $2,500,000 which will mean that Connecticut will receive $24,000 instead of $31,000 for this purpose.

Although the loss of 25 percent of Connecticut's tuberculosis control formula grant may seem small, it will have a serious impact on our continuing program. We can see no justification for this based on the argument that other funds will be available for special project grants, because in other fields we find Connecticut given a low priority on these.

Our State request for funds for tuberculosis control had to be submitted in September 1962 for the biennium 1963–65 and therefore it will be impossible through State funds to compensate for the loss of Federal funds for the tuberculosis program.

New active cases of tuberculosis in Connecticut increased from 487 reported in 1961 to 496 reported in 1962.

To avoid harm to this preventive program we hope you will urge that the tuberculosis control formula grants not be decreased.

Sincerely yours,

Franklin M. Foote, M.D., *Commissioner.*

Mr. Fogarty. They are concerned because you are reducing the grants from $3,250,000 to $2,500,000.

Dr. Blomquist. The decrease occurs in the formula grants. Therefore, there will be some decrease per State as a result of this. However, we hoped that the $750,000 increase in the special project grants will increase the number of grants we can award next year.

REASON FOR SHIFT

Mr. Fogarty. What is the reason for this shift?

Dr. Blomquist. With tuberculosis being distributed unevenly, over the country—and with tuberculosis being a big problem in the larger metropolitan areas—we felt that we could do more for most of the country, if we would help these areas in particular. It was our feeling that money given to specific communities, with the biggest problems, would have more beneficial effect in the long run.

SUPPORT OF NATIONAL ASSOCIATION

Mr. Fogarty. Does the national association support you?

Dr. Blomquist. The national association supports us.

RESULTS OF ISONIAZID RESEARCH

Mr. Fogarty. Do you have any results to report from your research program during the past year?

Dr. Blomquist. Our research projects have included the continuation of the work on isoniazid prophylaxis. As you recall, there have been a series of projects in which we have tested the effectiveness of isoniazid.

Mr. Fogarty. I noticed several articles recently about the effect of this isoniazid in the prevention of tuberculosis.

Dr. Blomquist. Yes. In most of the groups in which we have tried this out, we started out with a case rate of about 590 per 100,000. When the test was over, and we could evaluate it, we were able to reduce this case rate to 140 per 100,000.

CONGRESSIONAL SUPPORT

Mr. Fogarty. Several years ago, Congress gave you $250,000 more than the budget proposed at that time for research into the effect of isoniazid. Was that $250,000 well spent?

Dr. Blomquist. I think it was very, very well spent. Now we know not only the best dosages of the drug, the interval in which they should be given; we have a much better idea of how long it should be given. This is all for people sick with tuberculosis.

Now we are accumulating this knowledge about its use in much smaller doses for people who are at the risk of developing tuberculosis. They have not developed tuberculosis, but we are preventing it with these control studies, where we have half of the people on the drug, and by observing them over a length of time, we can observe exactly how effective this drug is in preventing the development of this disease.

This is increasingly important. By not waiting until the person is sick with the disease to treat it, but to identify those people who are in great risk of developing tuberculosis, and treating them before they become sick and need hospitalization, we are able to accomplish real savings.

Dr. Terry. Explain what you mean by "great risk."

What are people of "great risk?"

Dr. Blomquist. By "great risk," I mean people we have been able to identify, with certain characteristics and findings, who will subsequently develop tuberculosis. These are people who have a positive tuberculin reaction. These are people who, in previous years, have come in close enough contact with an active case of tuberculosis, that they have inhaled some germs; they have "localized themselves," usually in some focus in the lung, and are dormant, but as age progresses and stress occurs, this dormant focus can become active, and spread the disease.

Age is a definite factor. More men are involved than women.

We also test their tuberculin status and their X-rays. If there are X-ray findings suggestive of tuberculosis, and there are changes in the X-ray shadows and they have a negative sputum—these are the people who, in a short span of time, will actually break down with active tuberculosis.

Mr. FOGARTY. Is it fair to say that the action of Congress several years ago, in 1957, by giving you the additional $250,000, has prevented tuberculosis in many human beings?

Dr. BLOMQUIST. I think it is fair to say that the moneys that you have given us to investigate these drugs, particularly the isoniazids, has had a great effect on the course of tuberculosis in the last few years, and will continue to in the future.

There is no question but what some of the favorable results we are now seeing are in the improved treatment that has come about by the various research efforts in the country.

Mr. FOGARTY. Doctor, we talked, last year, about the program of eradication in the area of venereal diseases.

Dr. BLOMQUIST. Yes, sir. We did.

ERADICATION PROGRAM

Mr. FOGARTY. When are we going to get some kind of an action program on tuberculosis and eradicate tuberculosis?

I thought perhaps, by this time, Dr. Terry would have set up a similar committee as was set up in the area of venereal diseases—I think they did a real good job—and take a good look at this tuberculosis problem and make recommendations on how to eliminate it. Or do you have some better way?

Dr. BLOMQUIST. As I have said, we think the eradication of tuberculosis will go in phases, and we think the first thing that needs to be done is to get all our cases under good care and to establish these resources, all of which will be needed for any program additions we can conceive.

I am saying that any increase in other activities will need good treatment service at the local community; including increased case finding. If we increase prophylaxis, we have to have better services for the followup of these individuals, so we have been pressing for this first phase.

Mr. FOGARTY. We asked you to give us some figures last year, projecting a program.

Dr. BLOMQUIST. Yes, we submitted, for the record, a projected program over the next 10 years, the period of time starting in 1963.

It went to 1972. We started with an increase in the first year of 2.8 million and reached a peak at the fifth year.

Mr. FOGARTY. Congress increased your appropriation last year. That was in the area of grants.

Dr. BLOMQUIST. That is true, sir.

Mr. FOGARTY. How much did you get?

Dr. BLOMQUIST. We got an increase—we divided a half million dollars between formula grants and special projects.

Mr. FOGARTY. $500,000?

Dr. BLOMQUIST. That is right.

Mr. FOGARTY. Is this program you projected last year still good, as far as you can see now?

Dr. Blomquist. Yes, sir. I would think that this projection that we made last year holds today.

Mr. Fogarty. We will put the same table in the record, and hope we can stir up some interest among people to eradicate this particular problem.

That was on page 193 of the hearings last year.

(The information follows:)

Projected increased cost for 10-year program (1963–72)

[In millions of dollars]

Federal program	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	Total
Increases:											
(*a*) Formula grants	------	1.0	1.5	2.0	2.0	2.5	2.5	1.5	1.5	1.5	16.0
(*b*) Special project grants	2.6	4.5	7.5	9.5	10.5	10.5	10.5	7.5	4.5	1.5	69.1
(*c*) Professional services	.2	.5	1.0	1.1	1.1	1.1	1.0	.7	.3	------	7.0
Total increase	2.8	6.0	10.0	12.6	13.6	14.1	14.0	9.7	6.3	3.0	92.1
1962 base	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	65.0
Total cost	9.3	12.5	16.5	19.1	20.1	20.6	20.5	16.2	12.8	9.5	157.1
Increase in State and local expenditures would be $16,000,000 for public health activities, an amount equal to the increase in formula grants; and 20,000,000 for improvements in hospital care during the 1st 5 years	------	------	------	------	------	------	------	------	------	------	36.0
Overall increase—Federal, State, and local	------	------	------	------	------	------	------	------	------	------	128.1

APPLIED RESEARCH PROJECTS ON TB

Mr. Fogarty. This is sort of applied research, isn't it, that you are working in?

Dr. Blomquist. Yes. The activities in which we are working, I would call applied research.

Other examples of the thing we are doing, I talked about isoniazid prophylaxis—isoniazid treatment.

We are also working vigorously to identify the various components that may give us cross reactions to tuberculin tests. These are points that need to be clarified, so that we don't unnecessarily keep a large proportion of people on our caseload, who do not have tuberculosis, or are not suspected of having tuberculosis.

This last year, we have been very interested in the problem of drug resistance. As you know, in any of these new medicines, the germs, the bacilli, can become resistant to them, so we have been carefully watching this program.

I might mention that we have seen no increase in the last several years, in the number of patients who are resistant on the first treatment to the common drugs. We have been working on ways of best applying these new methods. We have used Puerto Rico for an example, as one of the stations in which we have worked with the local health department, to organize their services, so that this newer treatment, and prophylaxis can be immediately applied.

FOLLOWUP ON ARRESTED CASES AND CONTACTS

Mr. Fogarty. How long should an arrested case be followed?

Dr. Blomquist. We feel today that a person who has been discharged from treatment, should have an annual checkup. By that, I mean, at least an X-ray, once a year, for the rest of his life.

Mr. Fogarty. Every year?

Dr. Blomquist. Yes, because of the possibility of a breakdown.

Mr. Fogarty. How about the followup on a contact?

Dr. Blomquist. Because of the intimate contact of the person with the active case of tuberculosis, we would like to have the contact immediately examined to determine his status.

Certainly, we want to isolate him from the case or separate him from further contact. Then we observe him.

Now if he has certain characteristics, if he is very young with a positive tuberculin test, we feel the need for the institution of isoniazid prophylaxis. By that, I mean small doses of isoniazid given.

Mr. Fogarty. For how many years?

Dr. Blomquist. For 1 year.

Mr. Fogarty. One year?

Dr. Blomquist. One year. This reduces the expected rate of tuberculosis that would develop in that group, by 80 percent. It is the young individuals that develop the very grave types of tuberculosis, such as tuberculous meningitis, and other severe types of tuberculosis.

Mr. Fogarty. Did your project grants give you any answers needed to make tuberculosis control programs more effective?

Dr. Blomquist. I think so.

Mr. Fogarty. In what way? Give us some examples.

EFFECTIVENESS OF CONVENIENT TREATMENT

Dr. Blomquist. We have a number of examples in projects that are now going on which show us how tuberculosis programs might work more effectively.

First of all, it has been demonstrated to us that in many communities, the services that are rendered to patients must be given more conveniently. There has to be enough time for the patient. And, being a chronic disease, a disease where treatment and care is going to be extended over a number of years, the followup is the big problem; getting people to come back with any frequency.

Many of the communities in which we have worked, have been very effective in decentralizing their clinics to make them more convenient to the patients; holding clinics in the evenings and on weekends so that a man who is working doesn't have to take time off to go for his checkup.

Certainly, we found the provision of drugs is very effective in keeping them under care.

We found that the satisfaction that the patient gets will depend largely on the resources. He must see a physician. He must have an X-ray. He must have a feeling that he is getting good care and he is getting better.

Most of the activities of our special project grants have been increasing and improving the clinics, the outpatient services, and they have been done by increasing the hours of the clinic; the distribution of the clinic by adding personnel; and such things as enough money so that they get drugs when the drugs are prescribed, if they are asked to get a chest X-ray, that the X-rays are available; that laboratory examinations when recommended just are not something that they are not actually able to get.

ERADICATION PROGRAM

Mr. FOGARTY. Now, if we were to get the appropriation up to your proposal for eradicating tuberculosis in this country, we would have to be spending about $12,500,000 in 1964, instead of $6,828,000. Isn't that right?

Dr. BLOMQUIST. That is what we estimated in the second year, in our program.

Mr. FOGARTY. It would gradually go up to a high, in 1968 and 1969 of $20 million plus then start down?

Dr. BLOMQUIST. That is correct.

Mr. FOGARTY. And you still think this is a good plan?

Dr. BLOMQUIST. I think this is a very valid plan. It means very much to the country, and it will reduce the problem we have.

Mr. FOGARTY. Mr. Denton?

RESULTS OF CONTROL PROGRAM

Mr. DENTON. Here is one program that I think we can look at with a good deal of pride, when I think about the conditions with regard to tuberculosis when I went on this committee, 10 or 12 years ago and compare them with the present. Since that time, we have had isoniazid; streptomicin, and——

Dr. BLOMQUIST. PAS, we call it. It is so hard to say, we just use the initials.

Mr. DENTON. We have noticed a great decline in tuberculosis. In my district, in the tuberculosis hospitals there has been a great decline in the number of patients, and we know that the VA hospitals that have had tuberculosis have also shown a decline in the number of patients. I think we show great progress has been made.

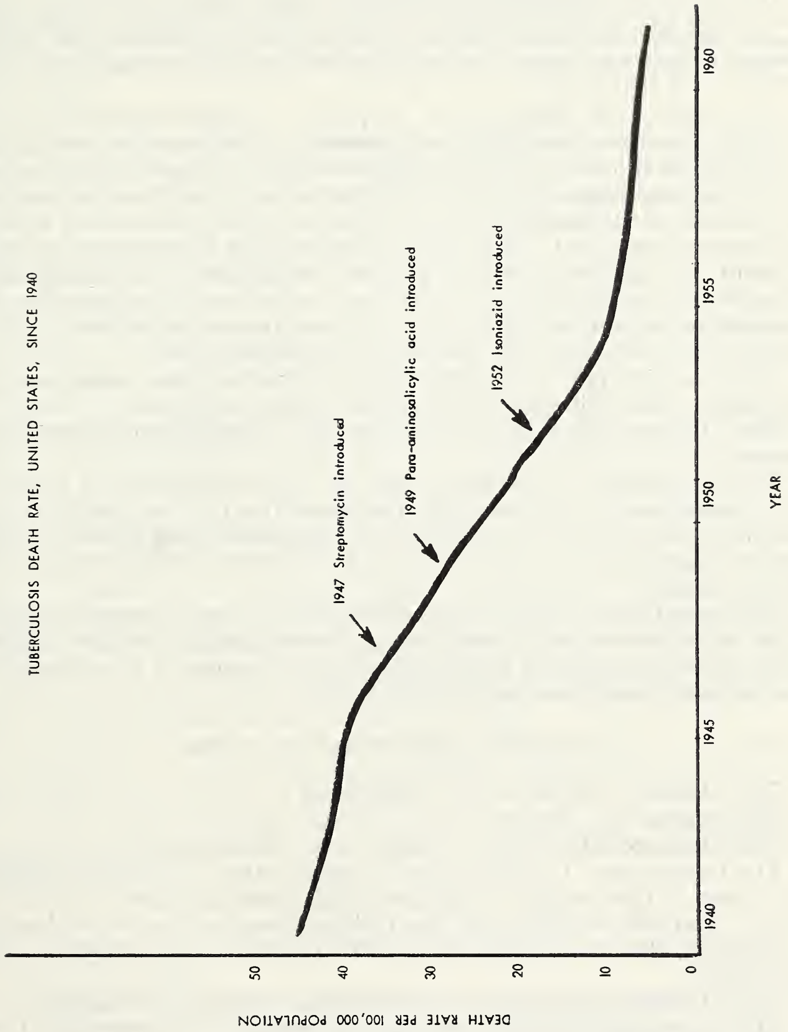
I wish you would make up a chart, showing the rate of tuberculosis before we had the drugs; the increasing population; and how the line of incidence would have gone up; then compare it with the actual rate of tuberculosis we have now. Also give us some figures about what the Government is saving on caring for veterans; what the State and local governments are saving in caring for people that have tuberculosis; what private charity is saving; and so forth. In other words show how much money has been saved because of this progress.

I sincerely believe we can show that every dollar which we spend has saved tenfold what we spent.

Dr. BLOMQUIST. I think so, too. We would be glad to work this up.

(The information follows:)

The reduction in deaths from tuberculosis during the past 15 years shows dramatically the effectiveness of antituberculosis drugs, improved treatment, and public health measures. In 1945, about 53,000 Americans died of tuberculosis, a rate of 40 per 100,000. In 1961, fewer than 10,000 persons died of the disease, a rate of 5.4 per 100,000.



TUBERCULOSIS DEATH RATE, UNITED STATES, SINCE 1940

The expense of hospitalizing tuberculosis patients is the most readily available direct cost figure. In 1961, the American people spent $262 million for tuberculosis hospitalization. There were 35,974 fewer active tuberculosis cases reported in 1961 than were reported in 1945, before antituberculosis drugs were available. If the number reported in 1961 had been the same as in 1945, tuberculosis hospitalization alone would have cost at least $481,000 more each day, $176 million more for the year, or a total of $438 million.

During the last decade alone, 171,000 fewer people have died of tuberculosis than would have died in that time if the rate had not declined. In that same period, 232,000 fewer active cases occurred as case rates declined, and 430,000 productive man-years were added to the working force because of reduced disability due to tuberculosis.

Dr. Blomquist. Speaking of hospitals, I would like to mention that the need for hospitals has decreased. We have just completed a study that shows that there continues to be a decrease in the number of actual beds needed, but I would like to point out that the number of admissions to hospitals is staying pretty much the same—a large difference being that their stay in the hospital is shorter. If I can explain it at this point, where a person needs to stay in a hospital 24 months—2 years, you see—we almost have to have two beds for one patient, on an annual basis. Now, if he stays only 6 months—5 or 6 months—we can have two patients in a bed per year.

This has been one of the large factors in the decrease in the need for hospitals. We still need them, and it is very important.

Mr. Denton. Now, this work that you do is all done through the States?

Dr. Blomquist. The moneys that we have for grants are given to the States, true. Our research program, the type of thing we are talking about when we investigate the isoniazid prophylaxis is done by our staff, in cooperation with them. Maybe I should explain how that is done.

We do not have a separate hospital, but we use 25 hospitals, where they all follow the same protocol; the same design of study; and we will analyze the data in Washington, and of course, it is available in the country, and these hospitals apply it.

LOCATION AND DUTIES OF STAFF

Mr. Denton. You have 195 employees?

Dr. Blomquist. Yes, sir.

Mr. Denton. How many of them are in Washington?

Dr. Blomquist. I shall be glad to supply that. I should mention that part of the program is located at the headquarters of the CDC. So my immediate office and the technical service people are located in Atlanta, this year, rather than in Washington. I wanted to make that clear.

Mr. Denton. Where is your office here—the South Building?

Dr. Blomquist. We are now in Bethesda. The operational research people are located in Bethesda at this point.

Mr. Denton. Not under NIH?

Dr. Blomquist. No. It is a building which we have occupied just this last month—during the month of February.

Mr. Denton. Where is it?

Dr. Blomquist. It is in the downtown area, the Woodmont Building. I cannot give you the address right now. It is in the downtown section of Bethesda.

Mr. Denton. How many do you have at these locations?

Dr. Blomquist. In Atlanta, we have 100 persons divided between the headquarters office and the laboratories at Chamblee. We have 70 people in Bethesda, and I could give it to you in terms of regions, in terms of our own regional offices.

Mr. Denton. You should have 25 in the regions.

Dr. Blomquist. Just about that—the remainder.

Mr. Denton. Now, what do those people in Washington do?

Dr. Blomquist. Well, the individuals who are in—if you mean Washington.

Mr. Denton. Bethesda.

Dr. Blomquist. The people who are in Bethesda are the people that actually carry out the research program. The programs like testing the new protocol of drugs; testing of isoniazid; these are the kind of people who plan and work with the hospitals or the health departments who actually carry out this work.

Mr. Denton. What do the ones down in Atlanta do?

Dr. Blomquist. In Atlanta, some of them are involved in carrying out the grant programs. These are consultants, people who will travel to the State or local health department and work with them in designing the project and consulting with them.

In addition, we have some people at Chamblee, who are actually engaged in research work. They are working with laboratory animals. Before we put any kind of a protocol in a hospital, for example, we will pretest it at our laboratory in Chamblee, on our animals.

Mr. Denton. I see. What about the people in the regions? Do they work with the States, too?

Dr. Terry. Mr. Denton, if I may, I think it is particularly important to point out that, particularly in programs of this sort, of the number of people, say, in Atlanta or even the people who are here in Washington, these people spend a great deal of time out in the field working on the field projects with the States, and that sort of thing; so that they do have their headquarters in the places indicated on the chart, but they spend a lot of time in the field.

Mr. Denton. I notice you are going to continue X-ray of the chest for screening purposes. I thought you said a year or two ago, you were going to abandon that program.

Dr. Blomquist. It is one of degrees. We still need the program. A diagnosis of tuberculosis still cannot be made without laboratory workup and X-ray.

PROJECT GRANTS

Mr. Denton. You have an increase of $756,000 for project grants. Just what is that?

Dr. Blomquist. These are grants that we give to specific communities, to improve their services to patients. The followup of contacts; and diagnosis of suspects. These are moneys that go for the employment of people and supplies, so that they can increase the services to their patients.

Mr. Denton. Why is it necessary to increase that?

Dr. Blomquist. The reason, I feel, is important. The program is directed towards those areas where the problem is the largest, considering the whole country. Again, I go back to the distribution of our tuberculosis problem. It is not evenly spread from one State to another. I could have brought a map to show you the distribution of cases—they are spotty. We feel it would help the problem countrywide, the most, to improve the services in these major areas.

Mr. DENTON. Now, on page 187, for grants, you show a total of $4,403,000. Just what does that mean?

Dr. BLOMQUIST. That is what page? 187?

Dr. DENTON. 187. Item 41.

Mr. HAMBLETON. That covers both the grants to States and the project grants.

Dr. BLOMQUIST. These are both types of grants.

Mr. DENTON. I think that is all.

Mr. FOGARTY. Mr. Lesinski?

DECREASE IN DORMANT CASES

Mr. LESINSKI. I was under the impression that all people had dormant tuberculosis. Is that true?

Dr. BLOMQUIST. No, sir. That is not true. If one goes back several generations, it was probably true that a high proportion of people were what we call tuberculin positive, which indicated they had a dormant infection, but today, that is not true. It is a remarkable fact that of the youngsters growing up today, each year, less and less show up as positive tuberculin reactors. We estimate that today young men attain the age of 21 with only 5 percent of them being positive reactors.

Mr. LESINSKI. In other words, the less tuberculosis there is, the less chance you have of carrying tuberculosis.

Dr. BLOMQUIST. I think this fact is one of the most encouraging points, to say we can eliminate, get rid of it.

Mr. LESINSKI. That is why I was concerned as to whether you could or could not. I can see it is possible.

It was mentioned this morning, there is some kind of a fungus infection of the lung, that was similar to tuberculosis.

Is that correct?

Dr. BLOMQUIST. That is true. There are a number of conditions that present problems to the physician, in arriving at the diagnosis of tuberculosis.

There are other diseases, malignant diseases, such as cancer of the lung, and at certain periods, they look on the X-ray somewhat like tuberculosis. There are fungus diseases. In fact, the textbooks say there are something like 55 conditions that simulate tuberculosis.

Mr. LESINSKI. It is kind of rough to be able to tell which is which.

You mentioned that there was a lesser need of hospital beds. Would you clarify that?

Dr. BLOMQUIST. Do you mean in the matter of tuberculosis?

Mr. LESINSKI. No. Generally.

Dr. BLOMQUIST. Yes, I would like to explain that.

At one point, treatment necessitated that all care be given at the hospital.

Mr. LESINSKI. I understood that. That is true; but I mean, generally speaking, all over there are less beds needed not only for tuberculosis; but for the overall field, do you need less beds or more?

Dr. TERRY. For all health services, as contrasted with tuberculosis?

Dr. BLOMQUIST. I am not sure I understand the question.

We need fewer beds for tuberculosis today than we did 10 years ago.

Dr. CHRISTENSEN. More general beds are needed than we have at the present time.

Mr. KELLY. We will present, probably tomorrow, the evidence of what the total need is for beds for all kinds of illnesses. This need is considerably greater than the existing number of beds.

Dr. BLOMQUIST. Yes.

EFFECT OF GENERAL HEALTH ON SUSCEPTIBILITY TO TB

Mr. LESINSKI. My question was based on the fact there is a shortage of hospital beds. Have you taken in consideration the cause of carbon monoxide in the study of tuberculosis, as a possible cause?

Dr. BLOMQUIST. This type of thing along with many other circumstances has on occasion been investigated. At this point we feel that—first of all, the true cause of tuberculosis is the inhalation of the specific tubercle bacilli, and that causes the disease. We do know such things as weight, nutrition, and age, influence the course of the disease. There is nothing that we have been able to accumulate through careful watching of the literature to suggest that the type of thing you are indicating has a major effect on tuberculosis.

Mr. LESINSKI. But it could be one of the collective things—you mentioned health, you mentioned——

Dr. BLOMQUIST. Yes, I am sure. We know the general standard of living is very important, the general health of the person is important. No longer do we feel that climate and altitude is significant. You recall there was a period when many patients were told to go to Denver because it was a high altitude, or go to Phoenix. These things we do not now advocate. The most important factor that will mean most to the people getting treatment is the proper useage of the modern drugs.

Mr. LESINSKI. In the exhaust, smoke, and cigarettes, and some of the other things you mentioned, will these have a bearing on lowering your resistance?

Dr. BLOMQUIST. I think one would have to say general nutrition of an individual is going to make considerable difference in how he reacts to his disease and how he progresses. Certainly these are factors.

Mr. LESINSKI. Thank you, doctor.

Mr. FOGARTY. Mr. Michel?

GEOGRAPHIC DENSITY OF TB CASES

Mr. MICHEL. Doctor, you spoke of a map that would have shown the density of TB cases. Have you got anything that you might present for the record that we might use to graphically show that?

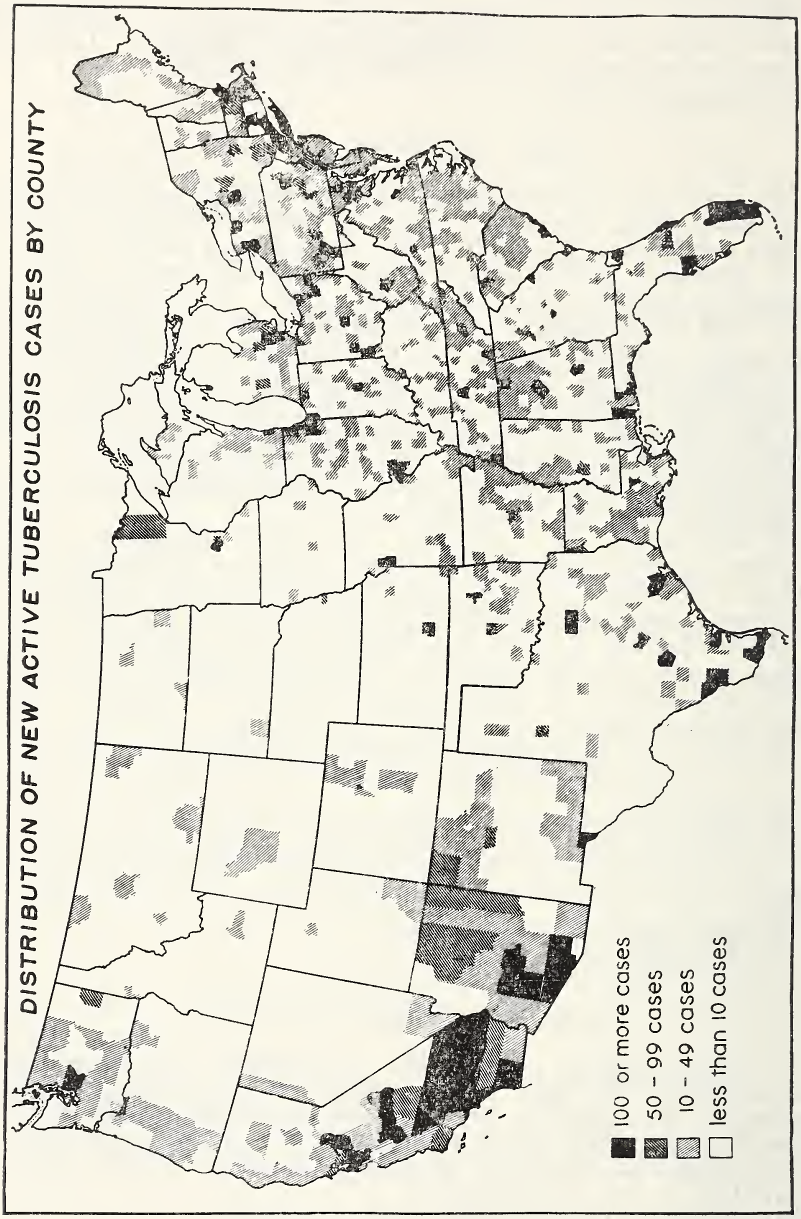
Dr. BLOMQUIST. We have any number of them. I was wondering if I might not have one here just to show what——

Mr. MICHEL. In a general way?

Mr. FOGARTY. He can supply it for the record.

Dr. BLOMQUIST. Be glad to.

(The map follows:)



DISTRIBUTION OF NEW ACTIVE TUBERCULOSIS CASES BY COUNTY

Mr. Michel. Fine.

Then do I understand in answer to a question of Mr. Denton's that the concentration of research grants is——

Dr. Blomquist. These are services.

Mr. Michel. Services are funneled into these areas of greatest density?

Dr. Blomquist. Yes.

Mr. Michel. That is all.

Dr. Terry. This is the purpose of the project grants. Mr. Michel, you will notice we are proposing a shift of some of the funds away from the formula grants to States toward project grants to concentrate on the area of greater concentration of the disease.

Mr. Fogarty. Is there anything else you would like to say, Doctor?

Dr. Blomquist. No, sir.

Mr. Fogarty. Thank you very much.

Tuesday, March 5, 1963.

CONTROL OF VENEREAL DISEASES

WITNESSES

DR. WILLIAM J. BROWN, CHIEF, VENEREAL DISEASE BRANCH, COMMUNICABLE DISEASE CENTER

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

EDWARD F. TUERK, CHIEF, OPERATIONS AND DEVELOPMENT UNIT, VENEREAL DISEASE BRANCH, COMMUNICABLE DISEASE CENTER

LELAND W. SMITH, FINANCIAL MANAGEMENT OFFICER, COMMUNICABLE DISEASE CENTER

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	2,121	2,224	2,405
	Positions other than permanent	901	2,094	3,204
	Other personnel compensation	13	15	34
	Total personnel compensation	3,035	4,333	5,644
12	Personnel benefits	246	303	374
21	Travel and transportation of persons	214	228	254
22	Transportation of things	55	61	63
23	Rent, communications, and utilities	26	24	25
24	Printing and reproduction	37	59	91
25	Other services	101	105	149
	Services of other agencies	--------	--------	13
	Research contracts	54	106	163
	Payment to Bureau of State Services management fund	42	62	92
26	Supplies and materials	124	131	135
31	Equipment	56	60	60
41	Grants, subsidies, and contributions	1,601	2,123	2,526
	Total obligations	5,590	7,594	9,588

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	324	330	344
Full-time equivalent of other positions	180	415	640
Average number of all employees	480	714	952
Number of employees at end of year	618	850	1,070
Average GS grade	8.9	8.9	8.9
Average GS salary	$7,098	$7,625	$7,611

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants to States	2,575	4,335	5,895
2. Research, training, and technical services	3,000	3,276	3,693
Total program costs, funded [1]	5,575	7,611	9,588
Change in selected resources [2]	15	−17	
Total obligations	5,590	7,594	9,588
Financing:			
Comparative transfers to other accounts	396	406	
Unobligated balance lapsing	15		
New obligational authority (appropriation)	6,000	8,000	9,588

[1] Includes capital outlay as follows: 1962, $67,000; 1963, $59,000; 1964, $60,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders; 1961, $44,000; 1962, $59,000; 1963, $42,000; 1964, $42,000.

Mr. Fogarty. We are glad to have you with us again, Dr. Brown. Please proceed with your statement.

General Statement

Dr. Brown. Mr. Chairman, members of the committee, in 1962, 20,084 cases of infectious syphilis were reported to health authorities in this country. This total is greater than has been reported in any year since 1950, and represents the fifth consecutive year in which an increasing number of cases have been reported.

This consistent increase in reported syphilis occasioned national concern and led to the appointment, by the Surgeon General, of a special task force to consider the syphilis problem and develop recommendations for a program for the eradication of syphilis.

The task force report "The Eradication of Syphilis" was released in December 1961 and, to the extent possible, the program outlined in these recommendations is being initiated this year. The 1964 budget request of $9,588,000, before you, for control of venereal diseases provides a $1,994,000 increase for further implementation of the Task Force recommendations.

The reported increases in early syphilis have not been peculiar to the United States but are being experienced all over the world. Experts in syphilis control from over 50 countries assembled at a World Forum on Syphilis and Other Treponematoses held in Washington, D.C., in September 1962 to delineate the current state of knowledge regarding syphilis control, outline future courses of action, and stimulate the undertaking of additional research indicated to expedite eradication.

TASK FORCE RECOMMENDATIONS

The recommendations set forth in the task force report were favorably received by forum participants from both this country and abroad and acclaimed an effective plan for the eradication of syphilis.

State and local health departments throughout the country have adopted the task force recommendations as a guideline for the development of their syphilis-control programs. Program emphasis is being given to the priority areas outlined in the report. We feel that we are making excellent progress in the eradication campaign. More than 200 field workers have already been added to the staffs of State and local health departments, an ever-increasing number of physicians are being visited on a regular basis, and more and more States are implementing, fully, their legal authorities to require that all laboratories notify the health department of the positive reactors to serologic tests for syphilis.

SURVEYS TO DETERMINE DISTRIBUTION OF DISEASE

To achieve the most effective utilization of available resources, the venereal disease program jointly sponsored two surveys to ascertain, more accurately, the current extent and distribution of the syphilis problem.

A survey of hospitals to obtain information on the extent of serologic testing for syphilis and hospital policies regarding the reporting of reactive tests to public health officials was conducted with the joint sponsorship of the American Hospital Association. Over 90 percent of the institutions responded. Only slightly over one-half routinely perform a serologic test for syphilis on adult inpatients, and less than 6 percent routinely test adult outpatients.

The routine performance of a serologic test for syphilis on all admissions to hospitals would significantly assist the eradication effort by increasing the scope of this valuable screening device. We have initiated discussions with the joint commission on accreditation of hospitals to urge that the requirement for admission serologic tests be reinstated for accreditation purposes.

In joint sponsorship with the American Medical Association, and the American Social Health Association, the venereal disease program conducted a survey of physicians and osteopaths in private practice in the United States to determine the number of infectious syphilis, gonorrhea, and other syphilis cases treated between April 1 and June 30, 1962. Results of this survey will permit a more accurate estimate of syphilis incidence and pinpoint the areas requiring special attention.

EDUCATION PROGRAM FOR YOUTH

Information-education programs directed primarily at teenage and other high-risk groups have been intensified in metropolitan areas. Special personnel devoting full time to this task are now assigned to New York City, Chicago, Los Angeles, and Philadelphia. Materials and experience acquired and developed in these areas will be adaptable to other programs. Pilot studies in behavioral science are being developed to provide answers to such questions as the most effective media for use in educational programs, attitudes and values of teenagers concerning exposure to and contraction of venereal diseases and the behavior patterns associated with exposure, prevention, and treatment of venereal diseases.

RESEARCH ACTIVITIES

Venereal diseases research is continuing in two fundamental areas: (1) The development of an effective immunizing agent against syphilis, and (2) development of an effective diagnostic test and treatment schedule for gonorrhea in females.

Although the success of our eradication program is not dependent on the development of a syphilis vaccine, the value of such a vaccine is evident. It would hold the gains made and even permit working ahead of infections instead of following them.

Field evaluation of the fluorescent antibody tests for gonorrhea has definitely provided its superiority over the old culture system. Utilization of this technique for diagnostic work will permit the development of an effective treatment schedule for female gonorrhea patients. The absence of an effective treatment schedule has prohibited a reduction in the reservoir of infectious gonorrhea cases.

Mr. Chairman, I shall be glad to answer any questions you may have about this program and the budget request.

Mr. Fogarty. Thank you, Doctor.

INCREASE REQUESTED FOR 1964

The appropriation for 1963 is $8 million and the request for 1964 is $9,588,000. Since expenses amounting to $406,000 are being transferred to the Communicable Disease Center, there is a net increase of $1,994,000, and 14 positions.

You are absorbing all the 1963 pay act costs?

Dr. Brown. Yes, sir.

Mr. Fogarty. What were the funding recommendations of the special task force to develop a program for the eradication of syphilis and how does this budget fit them?

Dr. Brown. The task force recommended that we add 500 additional employees to the staffs of State and local health departments and they estimated this would cost $3½ million.

They also recommended we initiate a program in education and information and behavioral sciences and recommended a half million dollars to initiate this type of program.

Mr. Fogarty. Well, how does your 1964 budget fit in with their recommendations?

REDUCTION BY BUREAU OF THE BUDGET

Dr. Brown. This is $286,000 less in grants than recommended by the task force, which would bring it up to the level of 500 additional personnel for the State and local health departments.

Mr. Fogarty. I see.

What was your initial request in this area?

Dr. Brown. We asked the Department for a total of $6,181,000 which was an increase over 1963 of $1,846,000.

Mr. FOGARTY. You asked for what the task force recommended?

Dr. BROWN. Yes, sir.

Mr. FOGARTY. Who cut the request, the Department or the Bureau of the Budget?

Dr. BROWN. Bureau of the Budget.

Mr. FOGARTY. Don't they want to get this under control? It seems to me that the task force should have known more about this problem than the Bureau of the Budget.

Do you still think you could use the $286,000 to advantage?

Dr. BROWN. Yes, sir.

Mr. FOGARTY. And it would help accomplish the end result?

Dr. BROWN. It would allow us to fund the projects that were requested and recommended by the task force.

Mr. FOGARTY. Are you short in any other areas?

Dr. BROWN. Except for absorbing the pay increase, which we have absorbed.

Mr. FOGARTY. How much was that? That set you back something in 1963.

Dr. BROWN. $139,000.

Mr. FOGARTY. $139,000.

GRANTS TO STATES

How are these grants to States allocated?

Dr. BROWN. On a basis of need; on a basis of a problem within the State, and on need for assistance to meet this problem.

Mr. FOGARTY. Can you give us a breakdown State by State? Put it in the record?

Dr. BROWN. Yes, sir.

(The breakdown follows:)

Allocations of venereal disease special project grants

State or territory	1962 actual	1963 estimate	State or territory	1962 actual	1963 estimate
Alabama	$40,044	$57,933	Nebraska	$12,438	$13,724
Alaska	1,000	7,000	Nevada	7,488	13,295
Arizona	17,042	54,665	New Jersey	67,383	163,887
Arkansas	75,243	102,340	New Mexico	35,970	40,150
California	107,019	395,961	New York	534,417	760,269
Colorado	2,449	7,295	North Carolina	115,872	180,100
Connecticut	10,854	15,431	North Dakota	11,367	16,422
Delaware	11,339	12,250	Ohio	9,003	34,500
District of Columbia	74,589	92.424	Oklahoma	18,744	35,500
Florida	105,746	199,280	Oregon	6,259	15,732
Georgia	232,854	296,448	Pennsylvania	115,118	299,682
Hawaii	1,250	3,625	Rhode Island	2,050	------------
Idaho	5,650	7,525	South Carolina	82,308	119,623
Illinois	216,793	384,198	South Dakota	8,724	13,604
Iowa	8,387	11,903	Tennessee	87,310	112,480
Kansas	15,347	25.009	Texas	141,984	217,150
Kentucky	40,686	52,705	Utah	350	4,885
Louisiana	67,074	77,250	Virginia	46,711	88,092
Maryland	34,287	63,400	Washington	4,246	21,000
Massachusetts	------------	2,475	West Virginia	18,909	22,509
Michigan	60,236	125,988	Wyoming	------------	1,276
Minnesota	920	5,476	Puerto Rico	32,664	32,625
Mississippi	31,095	42,300	Virgin Islands	6,065	6,927
Missouri	42,599	66,627			
Montana	7,248	12,060	Total[1]	2,575,131	4,335,000

[1] Venereal disease control grants are allocated on a special project basis. 1964 amount—$5,895,000.

STATE AND LOCAL CONTRIBUTION

Mr. Fogarty. To what extent are the State and local governments increasing their contribution?

Dr. Brown. They have increased their contribution and our latest information in this respect shows that there was an increase in State and local funding in the neighborhood of $1,200,000 in 1962 over that in 1961.

Mr. Fogarty. Any estimate for 1963?

Dr. Brown. No, sir. I do not have any.

Mr. Fogarty. When will you have that? Do you have to wait until the end of the fiscal year?

Mr. Tuerk. Yes.

RESEARCH PROJECTS

Mr. Fogarty. Do you have any results to report in research?

Dr. Brown. We have been working in the field of further evaluating and modifying the fluorescent antibody tests and if the modification which is being evaluated at present turns out as we expect, we feel that we will be at a point where we can recommend this test as a routine or standard laboratory procedure for the State health department laboratories. This would allow, rather than repeating the nontreponema tests, to medically use this test as a second test.

Mr. Fogarty. Any other results?

Dr. Brown. We are working in the field of gonorrhea to evaluate the fluorescent antibody gonorrhea test so that we can determine its practicability and if it can be used in local or in State health department laboratories. And using this test for diagnosis and as a test for cure. We are in the process of developing an adequate schedule of therapy for the treatment of female gonorrhea, which is one of our biggest problems.

We are also working in the direction of the development of a serologic test for gonorrhea. We have been able to maintain the virulence of gonococcus within the laboratory, something which has given us a problem through the years. And we have been working on differentiations in the strains of the gonococcus which we feel probably will be necessary before we can develop a good serologic test for gonorrhea.

We are still working on cultivating the treponema but I have nothing new to report in that area.

Mr. Fogarty. What is that?

Dr. Brown. The virulent treponema which causes human disease is being cultivated in the laboratory rather than in laboratory animals.

Mr. Fogarty. Is penicillin still the best treatment?

Dr. Brown. Yes, sir. Penicillin is still the drug of choice for both gonorrhea and for syphilis.

Mr. Fogarty. When Mr. Marshall was on this committee, as you probably remember, he thought that we ought to make it mandatory for everyone to be tested and treat all who had the disease and thus eradicate it in a very short period of time. Have you given any serious consideration to that?

Dr. Brown. At the present time laboratories within this country are doing 39 million serologic tests for syphilis a year. This is quite a segment of the entire population and of the population at risk. And we feel we can carry out the recommendation of the task force by having all these reactive reports made available to the health officials; that this will give us a tool which will be an excellent screening device.

INCREASED INCIDENCE BY AGE GROUP

Mr. Fogarty. Is it still so that much of the increase is happening in the teenage group?

Dr. Brown. There has been an increase in the teenage group but there has also been an increase in almost all age groups.

Mr. Fogarty. It seems to me the last 2 or 3 years the point was made that it was increasing more in the teenage group than in other age groups; or am I wrong?

Dr. Brown. There certainly has been an increase, and I will have to provide for the record the rates of increase of the different age groups.

Mr. Fogarty. All right.

(The information follows:)

Primary and secondary syphilis by age group

Age group	Calendar year			
	1959	1960	1961	1962 [1]
0–14: Total cases	129	159	245	301
Percentage increase over 1959	0.0	23.3	89.9	133.3
15–19: Total cases	1,620	2,577	3,215	3,561
Percentage increase over 1959	0.0	59.1	98.5	119.8
20–24: Total cases	2,699	4,691	5,575	6,094
Percentage increase over 1959	0.0	73.8	106.6	125.8
25–29: Total cases	1,990	3,385	4,092	4,059
Percentage increase over 1959	0.0	70.1	105.6	104.0
30 and above: Total cases	3,360	5,332	6,724	7,051
Percentage increase over 1959	0.0	58.7	100.1	109.9
Total, all age groups: Total cases	9,798	16,144	19,851	21,066
Percentage increase over 1959	0.0	64.8	102.6	115.0

[1] Provisional data.

ROUTINE TESTING OF HOSPITAL PATIENTS

Mr. Fogarty. You mentioned that you are trying to convince the group on accreditation of hospitals that this test ought to be given to more admissions. How are you making out with that group?

Dr. Brown. We have not actually sat down with them yet to present this to them.

One reason we have not reached the point of actually holding a meeting is that we wanted first to have the results of the survey which was carried out with the American Hospital Association to determine at what level routine testing is being done and how much is being reported to the health departments.

Mr. Fogarty. I think it is a good idea, myself.

I would think that they would go along with it.

Dr. Brown. I certainly hope they will, sir.

Mr. Fogarty. Mr. Denton?

HISTORY OF ANNUAL APPROPRIATIONS

Mr. Denton. When I went on this committee, in 1951, as I remember, we were spending about $15 million on venereal diseases. But the Surgeon General's program to eradicate these diseases was taking effect then, and, about 1954, the amount of money we spent got down to $3 million. Evidentally we cut it too low.

Of course we were very pleased that we had made so much progress, I remember, at that time.

Dr. Brown. Mr. Denton, the appropriation in 1954 was $5 million, and in 1955 it reached its low of $3 million.

Mr. Denton. What was it in 1951?

Dr. Brown. I don't have that before me. I only have this back to 1954.

Mr. Kelly. I think it was around $15 million.

Mr. Denton. As I remember, it was around $15 million.

Dr. Christensen. It even went up as high as $17 or $18 million at one time.

Mr. Fogarty. Yes. That was in the late 1940's.

Dr. Brown. Yes; 1947, I believe.

Mr. Denton. Anyhow, this committee recommended that steps be taken to see what we could do to eradicate the disease. I think that was the reason this task force was established, and I think that Congressman Fred Marshall was the one that was very insistent that if we were going to do anything, we take steps to eradicate this disease and you or your agency said it could be done.

Now, do you have, in the record, the amount of money the task force said would be necessary to eradicate syphilis?

Dr. Brown. Yes, sir.

And I will repeat the figures, if you wish. The task force recommended that we add to the State and local health department staffs a minimum of 500 people, which they estimated would cost $3½ million.

Mr. Denton. Did you ask for that amount of money?

Dr. Brown. Yes, sir. We have asked for that through the 1964 request.

Mr. Denton. And it was cut by——

Mr. Kelly. Although this budget is slightly less than the amount that the task force recommended, it comes pretty close to meeting the task force's recommendation.

Mr. Denton. That is right. It is only $400,000 below that.

COOPERATION OF PRIVATE PHYSICIANS

Now, when I was down at Atlanta, Dr. Smith was head of this Department at that time, and he said the one difficulty was to find the source of infection. And he said the difficulty they had was getting doctors to report the cases.

He said they had a program in Atlanta to try to encourage the doctors to report the cases which had been very successful. He said they had little difficulty in finding the source of infection when people went to the public physician, but the difficulty was when the people went to private doctors and the private doctors did not report the cases. Has anything been done along that line?

Dr. Brown. Yes, sir.

With the addition of personnel at State and local health department levels, and with redirection of the funds that we already had, we have been visiting private physicians and soliciting their help to have them report their cases and have a public health worker interview the patients. This is improving.

Mr. DENTON. Have you been working with health and medical societies?

Dr. BROWN. Yes. Through State and local health departments, we have been working with health societies.

Mr. DENTON. And have you had good success? Good cooperation?

Dr. BROWN. Very good.

Mr. DENTON. Of course, the disease can be treated much easier than it could some years ago. And if you could find the source of infection, you could treat the disease much more rapidly than you could a good many years ago.

Dr. BROWN. Yes, sir.

PERSONNEL INCREASES

Mr. DENTON. Now, in your justification you only show an increase of 14 employees.

Dr. BROWN. Yes, sir.

Mr. DENTON. But full-time equivalents of all other positions, you show an increase of 225. Now what is that?

Dr. BROWN. These are people who are provided the State and local health departments in lieu of cash.

Mr. DENTON. I do not follow you on that.

Dr. BROWN. State or local departments ask for people to be assigned to them to do this epidemiologic work, rather than asking for all of this in cash.

Mr. DENTON. You select the people and you send them to the various States?

Dr. BROWN. Yes, sir.

Mr. DENTON. I see.

Now your increase here is $1,994,000 and your largest amount is $1,310,600 in personnel service. That is the people you have assigned to this work?

Dr. BROWN. Yes, sir.

Grants will be increased through this budget by $1,560,000 and this will provide the States with either cash or personnel in lieu of cash.

DUTIES OF FIELD PERSONNEL

Mr. DENTON. What kind of work do these people do?

Dr. BROWN. They interview cases who have contracted venereal disease for their contacts. They go out and trace these contacts and bring them either into their private physician or to the local health departments for treatment.

After training, they visit private physicians to solicit their help in the educational program. They visit laboratory directors to solicit their help in reporting their reactive tests to the health departments.

Mr. DENTON. And these are very largely people that are selected by you, that are assigned to the states, who do this work?

Dr. BROWN. Yes, sir.

NUMBER OF PEOPLE BLOOD TESTED

Mr. DENTON. You said the blood test was a good clue to these cases. I can see where this is true. The number of people who get blood tests in the year, however, is comparatively small.

Dr. BROWN. As I mentioned a moment ago, Mr. Denton, 39 million specimens are done every year in laboratories throughout this country. Now that is a sizable portion of the public.

Mr. DENTON. That is about one-fifth of the people. Some of them must be duplications.

Dr. BROWN. Yes. This averages out about 12 percent of the population that do receive blood tests per year.

Mr. DENTON. Of course, as I said before, I can see where it is a good clue, but I think you have got to go beyond that in order to find the source of infection in these cases.

Dr. BROWN. In the interviewing process—we find this is an excellent way of finding the infectious cases.

These people who are on the State staff actually interview the infected person and will trace down the contacts and bring them in for examination.

Blood testing does provide a source of finding cases, as in premarital examinations—3 million people are screened every year; and in prenatal examinations, 4 million mothers are screened every year for syphilis with a serologic test.

Mr. DENTON. I think that is all.

Mr. FOGARTY. Is there anything else you would like to say, Dr. Brown?

Dr. BROWN. No, sir.

Mr. FOGARTY. Thank you very much.

Dr. Galagan, are you ready.

I believe we will conclude with Dr. Galagan tonight and meet at 10 o'clock in the morning.

TUESDAY, MARCH 5, 1963.

DENTAL SERVICES AND RESOURCES

WITNESSES

DR. DONALD J. GALAGAN, CHIEF, DIVISION OF DENTAL PUBLIC HEALTH AND RESOURCES

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

DR. VIRON L. DIEFENBACH, DEPUTY CHIEF, DIVISION OF DENTAL PUBLIC HEALTH AND RESOURCES

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	1,138	1,465	1,602
	Positions other than permanent	227	382	397
	Other personnel compensation	2	3	11
	Total personnel compensation	1,367	1,850	2,009
12	Personnel benefits	148	198	218
21	Travel and transportation of persons	140	205	224
22	Transportation of things	19	21	20
23	Rent, communications, and utilities	27	35	40
24	Printing and reproduction	28	38	48
25	Other services	110	204	255
	Research contracts	187	229	254
	Payment to—			
	Bureau of State Services management fund	43	68	156
	National Institutes of Health management fund	6	8	9
26	Supplies and materials	60	96	110
31	Equipment	170	62	50
41	Grants, subsidies, and contributions	2,132	2,418	2,834
	Total obligations	4,437	5,431	6,227

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	174	198	209
Full-time equivalent of other positions	50	83	86
Average number of all employees	201	268	285
Number of employees at end of year	276	299	318
Average GS grade	7.8	8.0	8.0
Average GS salary	$6,670	$7,177	$7,136

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(a) Research	476	592	673
(b) Training	1,656	1,826	2,161
2. Research, training, and technical services	2,155	2,913	3,393
Total program costs, funded [1]	4,287	5,331	6,227
Change in selected resources [2]	150	100	
Total obligations	4,437	5,431	6,227
Financing:			
Comparative transfers from other accounts (−)	−2,145	−2,436	
Unobligated balance lapsing	108		
New obligational authority	2,400	2,995	6,227
New obligational authority:			
Appropriation	2,500	3,006	6,227
Transferred to (−)—			
"Salaries and expenses, Office of the Surgeon General" (42 U.S.C. 226)	−100		
"Operating expenses, Public Buildings Service," General Services Administration (76 Stat. 728)		−11	
Appropriation (adjusted)	2,400	2,995	6,227

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[1] Includes capital outlay as follows: 1962, $133,000; 1963, $120,000; 1964, $60,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $143,000 (1962 adjustments, −$37,000); 1962, $256,000; 1963, $356,000; 1964, $356,000.

GENERAL STATEMENT

Mr. FOGARTY. Go right ahead, Doctor.

Dr. GALAGAN. Mr. Chairman, I have a statement that I would like to file for the record.

Mr. FOGARTY. Fine.

(The statement follows:)

Mr. Chairman and members of the committee, I am pleased to have this opportunity to describe the activities and objectives of the Division of Dental Public Health and Resources, which are included under the appropriation title, "Dental services and resources."

Ours is fast becoming a nation of dental cripples. It is a matter of record that every other person over 50 years of age has lost all his teeth—some 21 million people in all; that half of all school-age children have malocclusion; that 6,000 children are born each year with cleft lip and palate. It is also a matter of record that 9 percent of all cancers diagnosed are oral cancers; that two out of three oral cancer victims are dead within 5 years of diagnosis and, what is the more tragic, that 90 percent of these deaths could be avoided through earlier detection and treatment.

These statistics provide only an outline of the national dental health problem, not the whole picture. But they underscore two important points: (1) Existing needs for dental treatment are far greater than the amount being sought, and (2) dental neglect—whether it stems from ignorance of the value of care or inability to pay for it—has resulted in a backlog of treatment needs so great that our current dental force will never be able to overcome it. Indeed, our current supply of dentists could fill no more than a small percentage of the estimated 700 million cavities that exist today.

Compounding the problem is the fact that the Nation is threatened with a serious shortage of dentists. In recent years we have had an almost uninterrupted drop in the ratio of dentists to population. Unless we can achieve substantial increases in the numbers of dentists graduated each year, the Nation not only will fail to effect an improvement in dental health standards, it will watch them deteriorate still further.

It is to this complex of problems that the programs of the Division of Dental Public Health and Resources are directed. These programs encompass a wide-ranging but highly integrated series of activities which are continually being strengthened and improved as the Division's experience increases and as new areas of necessary action emerge. The appropriation requested for 1964 will permit further progress in programs which the report of the Commission on the Survey of Dentistry considered essential to the Nation's health: manpower development and better use of auxiliary personnel; extension of prepaid dental care; programs for the development and application of preventive and control measures; and support of applied research in dental public health.

GRANTS

It is worthy of special emphasis that this year for the first time the budget includes grants items for applied research and for training. The base for these items is comparative transfers from the National Institute of Dental Research, under whose appropriations they were previously budgeted. The transfer of the research grants item to this Division gives us a much needed opportunity to administer grants in our own fields of activity, and it has been effected in recognition that research to develop more effective methods for the application of knowledge is an essential corollary to the more fundamental research supported by the National Institute of Dental Research. The training grant program being transferred has been administered by this Division since its initiation in 1961.

Training grants

Because treatment is essential to the protection of oral health, the proportionate decline in dentist supply is the most serious problem in the entire dental health field. Just to stop the decline during the next decade, the Nation must increase the number of dental graduates by 2,700 annually, and to do so, it must build the equivalent of 20 new dental schools. But because the ultimate solution of the dental health problem lies not in the perpetuation of today's levels of service but in their improvement, efforts to stabilize dental supply must be accompanied by increases in the effectiveness and productivity of the individual practitioner. One of the best ways of achieving this is through the more efficient employment of dental auxiliaries particularly the chairside assistant.

To this end, the Division, through its training grant program, supports instruction of dental students in the utilization of chairside assistants. All but a very few of the Nation's dental schools are participating in this program. Though the amount of support currently provided through grants permits schools to offer only a few weeks of introductory training, the documented increases in student productivity and improvement in clinical performance are great enough to indicate the importance of extending the length and increasing the depth of training. The 1964 request will permit the further development of this very important program.

Research grants

The new research grants program of the Division is a significant addition to its activities, for it will permit the Division to support research related to its direct operations. We intend to give new slant and impetus to the research supported by these funds, to concentrate on the development of better methods for delivering services, with particular emphasis on facets of activities which the survey of dentistry calls too long neglected—the planning and administration of dental health programs, the community organization of dental programs, the study of various methods of financing dental care, and improvement in communication. We believe that these grants, carefully administered, will reduce the time lag between the discovery of knowledge and its effective use.

RESEARCH, TRAINING, AND TECHNICAL SERVICES

Manpower supply and utilization

The Division augments its training grants program designed to teach dental students to use auxiliaries in many ways. Experimental projects are supported in a variety of schools at various educational levels to determine the type and amount of training required to produce effective chairside assistants. Experience so far suggests that the currently accepted time required to train an assistant can be reduced substantially.

Other aspects of the full utilization of assistants are the delineation of the additional duties which can be delegated to them, measuring the time required to teach these duties, and the determination of the optimum size of the dental operating team. The Division this year is launching an experimental project to obtain such information. The project is expected to have a significant and constructive influence on clinical dental practice.

Effective utilization of dental auxiliaries means that in future years, the dentist will delegate a substantial number of subprofessional duties which today consume his time. Consequently, the realinement of duties will affect not only auxiliary education but the curriculum and teaching methods of dental schools. Occurring at a time when expansion of school facilities seems imminent, it is important that new schools be designed to accommodate the newly emerging patterns of dental practice. After a nationwide study of dental schools in 1962 the Division published Dental School Planning, the first such guide in the dental field. The purpose of this comprehensive guide is to aid in the planning of new schools which may be built and to encourage present schools to make the best use of existing facilities by devoting available funds to their renovation. In this connection, the Division offers architectural consultation, and in the past year, 17 schools requested and received assistance ranging from general advisory sessions to detailed feasibility studies.

A guide to assist States and communities in determining their own needs for dental training facilities is nearing completion, with publication expected next year. In collaboration with the American Dental Association and the American Association of Dental Schools the Division also has launched a study of dental school financing. Questionnaires will be distributed in the spring of 1963; the study should be completed in 1964. The findings should help clarify the administrative problems of schools and suggest the types of financial support required.

Development of dental health programs

Although the continuing educational and economic upswing is steadily raising the percentage of people seeking dental care, the majority of the population continues to go without it. In fact, though the amount of money the average person spends on health services continues to rise, the proportion spent for dental care has now begun to decline. One of the reasons is that dental care is not generally covered by health and medical insurance. The emergence of prepaid dental care plans must therefore be regarded as an important development.

Even though their growth has been slow and geographically uneven, it has been consistent enough to suggest that these plans will in time become as common as medical coverages. Equally important is the current trend toward more comprehensive plans and the increasing interest of State and local dental societies in organizing nonprofit dental service corporations through which high quality plans can be tailored to the specific needs of different population groups.

The Division encourages intelligently planned and administered prepayment programs by conducting a continuing series of analyses of all phases of prepayment; its information clearinghouse furnishes actuarial and management data and consultative services to interested groups in all sections of the country. In the last year, it has met some 500 requests for consultation or information and, in addition, conducted a 3-day conference on prepaid care for public health officials, insurance executives, and members of the dental profession. Similar conferences will be held next year for labor and management groups. Also planned is an experimental prepaid program for college students.

To its growing list of publications on prepayment, the Division added An Experiment in Dental Prepayment—The Naismith Dental Plan, two studies of dental service corporations in Oregon and California and revisions of the Digest of Prepaid Dental Care Plans and Selected Fee Schedules in the United States and Territories.

The prevention and control of disease

The best way to protect health is to prevent disease. One method of preventing dental disease—the controlled fluoridation of community water supplies—is so effective, safe, and economical that it has been called the ideal public health measure. Yet fluoridation, which can reduce caries attack by as much as 60 percent, has yet to be adopted by over 15,000 of the Nation's towns and cities. And, where fluoridation has been submitted to a vote, the majority of referendums have been won by the antifluoridationists. To stimulate interest on the part of National, State, and local organizations in fluoridation, the Division last year established a special fluoridation unit. This unit develops and distributes educational material, offers consultative services, and conducts analytical studies of community efforts to institute fluoridation. Though it is still too early to measure the full impact of these activities, there are already some definite signs of progress. In 1962, the number of communities fluoridating rose to 2,302, an increase of more han 100 over the previous year, and the number of people protected reached 43 million. Detroit has decided to fluoridate; another large city may soon follow suit. It seems likely that several million more people will be added in the near future to those protected by fluoridation.

The Division is continuing its work in the development of home fluoridators, in the testing of fluoride toothpaste, and in the improvement of defluoridation techniques for use in areas with an excess of natural fluorides.

Next to prevention, the best method for protecting dental health is the effective control of disease. Time is the crucial factor in the diagnosis and control of the killer among dental diseases, oral cancer. Laboratory examination of oral tissue scrapings is a simple but successful method for detecting early cancer. The Division-sponsored experimental studies to determine whether this cytologic procedure can be used effectively by private practitioners has yielded promising results, and we are initiating five additional projects this year.

The Division also is stepping up its studies of dental care for persons whose physical and mental handicaps bar them from normal access to dental services. Pilot studies in three States are providing valuable data on the treatment needs of handicapped children and new dental care projects for mentally retarded children have been started in Missouri and the District of Columbia. Technical assistance and support are being offered to State and local groups to establish continuing care programs for the chronically ill, aged, and mentally retarded.

Care for these groups is not altogether a technical and organizational problem. It also involves the educational preparation of dentists to increase their willingness to provide such care. Pilot teaching projects in 11 dental schools have been started to develop the necessary educational methodology. An unexpected byproduct is that participating schools report the projects have had a real impact upon the social conscience of dental students. They are leaving the course with a greater awareness of their professional obligations to the community.

The Dental Health Center

The only national center for creative work in dental public health has completed its first full year of operation. A well-developed series of research and training activities are already underway. The rest of the building is now being remodeled to permit acceleration of its research and teaching programs.

One of the first major programs undertaken by the Center was an epidemiological study of cleft lip and palate. From a 5-year review of the birth records in four States, the Center has analyzed data on 4,500 cases and will publish initial findings during 1963.

Much significant information has already been obtained from this pilot study. It appears that clefts occur 2½ times more frequently among Caucasian or Oriental children than among Negroes; that mothers over 35 bear a disproportionate number of children with cleft lip and palate or isolated cleft palate; that there may be a relationship between the father's age and the occurrence of clefts which is independent of the age of the mother; and that two-thirds of the clefts of the lip occur on the left side. These and other data provide very important clues which will be pursued further. Beginning this year the new National Cleft Lip and Palate Intelligence Service will study birth records from 32 States. From these more definite studies, additional data will be obtained which should shed a great deal of light on possible causes of this terrible disfigurement.

Research into the nature of periodontal disease, much of it done at the Center, has already suggested a definite cause and effect relationship between oral calculus, oral debris, and periodontal disease. Should continuing studies support the hypothesis, we may be able to work out a method for preventing periodontal disease, the major cause of tooth loss from middle age onward.

The Center is also cutting new paths in the long-neglected field of public health training. Courses this year will be offered in research design, dental indexes, program design, oral cancer detection, and radiological safety. Short-term courses in similar subjects will also be offered to private dental practitioners. The Center is studying the feasibility of using automatic teaching machines in dental and dental auxiliary education. By determining what subjects are adaptable to machine teaching, the study can make a substantial contribution to improved teaching methods.

The most significant of the training activities to be undertaken by the Center is its year-long residency program in dental public health. The survey of dentistry deplored the lack of adequate field training for public health dentists. In July 1963, the Center will offer these needed residencies, beginning with an enrollment of 10.

In summation, to carry out the increased responsibilities of the Division of Dental Public Health and Resources, we are requesting an appropriation of $6,227,000. An additional $380,000 and 11 positions over the 1963 level is requested for direct operations. For our special training grant program and for our research grant program we are requesting increases of $335,000 and $81,000, respectively.

Dr. GALAGAN. I would like to summarize it if I may.

Mr. FOGARTY. Go ahead.

Dr. GALAGAN. I am pleased to present the activities supported by the appropriation, "Dental services and resources."

TRAINING AND RESEARCH GRANTS

It is worth special mention that this year, for the first time, the budget includes grants for training and applied research. The base for these items was transferred from the National Institute of Dental Research to aline our budget with our training program responsibilities and to provide research grants related to our mission.

Training grants support instruction in the use of chairside assistants in the Nation's dental schools and they are designed, as you know, to make the future dentist more productive and to help alleviate the manpower shortage.

The research grants will support research in methods of financing dental care, improvement in preventive and control techniques, and in community dental program administration and practices.

The steady decline in the dentist-population ratio continues to be the most serious threat to the dental health of the Nation. Our grants program to improve dentists' efficiency, which I mentioned earlier, are accompanied by direct activities to ease the manpower shortage.

For example, as a guide to orderly dental school expansion, we have published "Dental School Planning," which is applicable both to the planning of new schools and the rehabilitation of existing facilities. In addition, our studies and demonstrations to improve the training of dental assistants are now beginning to yield useful results.

We are very concerned about the fact that the proportion of the health dollar spent for dental care continues to decline. Our activities to encourage prepaid dental care programs, which can reduce the financial barriers to dental care, therefore assume new importance as a means of assuring access to adequate levels of dental service.

WATER FLUORIDATION

Prevention also demands greater emphasis. Last year we established a special unit to stimulate interest in community water fluoridation. More than 100 additional communities have since fluoridated, bringing the total number to 2,302, and the number of people protected to 43 million.

The adverse fluoridation trend has at last been reversed, but a great deal needs to be done.

To facilitate the use of a simple method for the early detection of oral cancer, we are initiating five more programs demonstrating the use of cytological screening procedures by practicing dentists. In addition, demonstration projects in the dental care of the physically and mentally handicapped also are being increased.

The Dental Health Center has completed its first full year of operation. A pilot study of cleft lip and palate uncovered some extremely promising leads. The study is proceeding this year on a nationwide basis. The Center's training program is progressing very satisfactorily. We are putting special emphasis this year on continuation training for practicing dentists in order to expedite the communication of new knowledge to the practitioner. A full year residency program in dental public health begins July 1.

BUDGET REQUEST

In summary, Mr. Chairman, we request an appropriation of $6,227,000; $380,000 and 11 positions over the 1963 level is requested for direct operations to increase programs in disease control, prepayment, and research and training at the Center. For our special training grant and research grant programs, we request increases of $335,000 and $81,000, respectively.

Mr. Chairman, I shall be glad, to the best of my ability, to answer any questions about this program and the budget request.

Mr. Fogarty. All right, the appropriation for 1963 for activities carried in the 1964 budget is $5,431,000 and the request for 1964 is $6,227,000, an increase of $796,000 and 11 positions.

COMPARATIVE TRANSFER FROM NIH

Almost half of your appropriation base is made up of the comparative transfer from the National Institute of Dental Research. What are the activities covered by this transfer?

Dr. Galagan. The largest amount of money will be the $2,161,000 which goes to dental schools for teaching students how to use assistants effectively. The smaller amount—$673, 000—will support research projects related to our mission.

Mr. Fogarty. To what?

Dr. Galagan. They will support research projects related to our mission.

Mr. Fogarty. In dental schools?

Dr. Galagan. And in health departments.

Mr. Fogarty. I see.

Dr. Galagan. And voluntary agencies.

Mr. Fogarty. Wherever the applicants come from?

Dr. Galagan. That is correct.

Mr. Fogarty. Have you been carrying out these activities under allocated funds or has the institute been doing it?

Dr. Galagan. From the initiation of the dental student training program we have administered that program although it has been carried in the dental research appropriation. I think it first appeared formally as a budget item in 1961. We have not heretofore administered the research grant program which is being transferred.

Mr. Fogarty. Are there any advantages or disadvantages, or both, in handling the budget as proposed in the 1964 budget?

Dr. Galagan. Well, I think, Mr. Fogarty, there are decided advantages from our point of view.

Mr. Fogarty. Last year's appropriation was $500,000 more than you requested; $300,000 for the Dental Health Center and $200,000 for the oral cancer cytology program. Specifically what is being done with those increases?

CLEFT LIP AND PALATE RESEARCH

Dr. GALAGAN. First of all, we have stepped up our epidemiology program; as indicated in my summary statement, we had completed by the end of last year a pilot study of cleft lip and palate in four States on a 5-year sample basis.

Mr. FOGARTY. What are some of the results of that study? We have been talking about that problem for years and are we finally getting somewhere?

Dr. GALAGAN. I think we are getting some very promising leads, Mr. Fogarty. On the basis of our pilot study, we have found that cleft lip and palate occurs 2½ times more frequently among Caucasian or Oriental children than among Negroes. The age of the mother influences greatly the occurrence of cleft lip and palate.

Mr. FOGARTY. In what way?

Dr. GALAGAN. The older the mother, the more likely she is to have a child with cleft lip and palate.

Mr. FOGARTY. I believe the same is true with mental retardation?

Dr. GALAGAN. Yes. Oddly enough, the age of the father, independent of the age of the mother, apparently influences the incidence of cleft lip and palate.

Mr. FOGARTY. The older the father is?

Dr. GALAGAN. Yes, sir. Independent of the age of the mother.

We are finding that cleft lip alone, for some reason, occurs two-thirds of the time on the left side. We still do not know why.

These leads and many others which have been found in the first year study, supported by last year's appropriation, are now forming the basis for an expanded nationwide study, which will require about $190,000 or $200,000 of the $300,000 made available for the Center in this fiscal year.

Mr. FOGARTY. What can be done for cleft lip and palate?

Dr. GALAGAN. Well, at the present time there is no preventive procedure available.

COST OF REHABILITATION

The only thing that can be done is to rehabilitate the child, a long and expensive and very complicated process, starting from birth and going on to young adulthood.

Mr. FOGARTY. That long?

Dr. GALAGAN. Yes, sir. I believe we submitted for the record last year an estimate of the cost of rehabilitating a child with a cleft lip and palate.

Mr. FOGARTY. Would you put in the same thing again this year?

Dr. GALAGAN. Be glad to do that.

(The data follow:)

Estimated total cost for rehabilitation of a cleft lip and/or palate patient, including maintenance care from birth through 18 years of age

Type of treatment	Percentage of children needing treatment	Range of cost per child needing treatment	Range of average total cost birth to 18 years
Hospital cost (average 2 visits per child for correcting cleft(s); surgery, anesthesia, hospitalization	100	$1,050–$1,500	$1,050–$1,500
Orthodontia (average 3 years treatment plus retention)	75	760– 1,800	570– 1,350
Speech therapy (over a 2-year period)	50	600– 1,000	300– 500
Speech appliance (new obturators needed as child grows and develops)	20	1,000– 2,500	200– 500
Routine dental care (from age 3 through 18 inclusive)	100	1,050– 1,650	1,050– 1,650
Psychological evaluation of child—extensive testing and review	25–40	200	50– 80
Counseling of parents and child-psychotherapy (per session $25)	15	2,000– 4,000	300– 600
Pediatric care (including ENT consultation and other specialized consultation)	100	[1] 1,800	1,800-
Hospitalization costs for dental procedures (not associated with the cleft)	10	100– 1,000	10— 100
Total		8,560–15,650	5,330– 8,080

[1] $100 per year.

NOTE.—The costs outlined above are based upon estimates of treatment costs per child ranging from allowance of $8,560 to a high of $15,450 obtained from public and private agencies and, therefore, a range of costs is given. These estimates are on the conservative side because it is not possible to assign a monetary sum or obtain estimates on such items as case finding, the loss of productive time involved in parents bringing children in for treatment, and transportation.

NUMBER OF CASES

Mr. FOGARTY. How many of these abnormalities occur each year?

Dr. GALAGAN. 250,000 in the United States—about 6,000 newborn each year.

Mr. FOGARTY. That many?

Dr. GALAGAN. One in every 600 to 800 live births is a child with cleft lip and palate.

We are placing our emphasis on trying to find where these cases occur, under what conditions, to see if they will give any leads as to what causes it.

ABSORPTION OF INCREASED COSTS

Mr. FOGARTY. Congress thought your program important enough to allow the full budget plus $500,000 for 1963, and yet you have been required to absorb 100 percent of the pay act costs in 1963. How much is that?

Mr. HAMBLETON. $50,000.

Mr. FOGARTY. Is there any other such cost you are required to absorb?

Mr. HAMBLETON. Yes. The commissioned officer's quarters and per diem costs, $8,000 for quarters and $11,000 for per diem.

Mr. FOGARTY. What is the total amount?

Mr. KELLY. $68,000 to $69,000.

Mr. HAMBLETON. $69,000.

Mr. FOGARTY. Are you cutting back anything that Congress earmarked funds for?

Dr. GALAGAN. No, sir.

I started to tell you about the $300,000 available for the Center, which Congress——

Mr. FOGARTY. I did not give you a chance. Go ahead.

TRAINING PROGRAM

Dr. GALAGAN. I want to go on, if I may, and describe the increase in our training program, which is designed to communicate to practicing dentists the new knowledge that is being made available through scientific research.

We have developed and are in the process of applying a continuation program, a continuing education program for practicing dentists, by taking educational short courses to them—particularly in the areas where dental schools do not exist—through the auspices of dental societies, health departments, and other agencies, so the dentist in private practice may have the benefit of the new knowledge that is available and which he may not be using.

In addition, we will be starting our residency program in dental public health on July 1 of this year. This is the first residency program of its kind in this country. It will be a full year residency in the specialized field of dental public health.

ORAL CYTOLOGY

The $200,000 that was made available for the oral cytology programs has enabled us to start five teaching and service projects designed to train the practicing dentist in the use of this very simple technique. The programs are planned to facilitate the use of the technique in an organized program so that the dentist can take the smear, which is very simple as you know, send it in to a laboratory for review, and then, if the findings are positive, refer the patient for a definitive diagnosis through biopsy.

Mr. FOGARTY. What percentage of dentists do that?

Dr. GALAGAN. Oh, very few. I could not give you a numerical answer, but it would be less than 200 or 300. Probably the only private practitioners that are using it at the present time are those that were trained in our own pilot project up in Minnesota, which we started about 3 years ago.

Then there is in addition, I should add, in the Public Health Service now a program in its own hospitals on the use of cytological screening of all patients that go through the hospital system, both outpatient and inpatient. So we are using it in our own installations, too.

Mr. FOGARTY. How do you take that smear from the mouth?

Dr. GALAGAN. Well, any suspicious looking lesion is scraped very gently, then the scrapings are put on a slide and covered and sent to the laboratory for review.

Mr. FOGARTY. I see.

Dr. GALAGAN. In the laboratory they look for the particular kind of cell that is indicative of early cancer.

It is not a precise diagnostic method; it is a screening procedure. But it is our belief that the dentists of the country constitute an existing network for the possible detection of early cancer. It is our hope to implement this program on as broad a basis as we can so every dentist can use it routinely as he sees patients.

Mr. FOGARTY. On page 228, you refer to—

> * * * the steady deterioration of the Nation's dental health.

Dr. GALAGAN. Yes, sir.

Mr. FOGARTY. Is it really that bad?

SHORTAGE OF DENTISTS

Dr. GALAGAN. Yes, sir. I believe that the manpower situation insofar as the dentists are concerned is more critical than it is for physicians or for nurses. As I am sure you know, Mr. Fogarty, the ratio of physicians to population has remained about the same since World War II. I believe I am correct when I say the nurse population ration has improved a little bit. On the other hand, the dentist population has continued to decrease during the same period.

There are two important reasons for this decline. Dental schools are very expensive to construct and to operate. Universities have been reluctant to build the new schools required to produce the number of dentists needed to keep pace with the population. Secondly, the profession has not permitted foreign graduates to come into this country and apply for a license. The number of physicians that come into this country from outside for practice is about 10 percent of the total of newly licensed physicians; we fall behind by about 10 percent. We feel that the manpower situation is critical.

Mr. FOGARTY. The American Dental Association does not have any loan fund, does it, for students?

Dr. GALAGAN. A very small loan fund entitled "The Fund for Dental Education."

Its total resources are very modest.

Mr. FOGARTY. I know the American Medical Association's funds are very limited.

TRAINING GRANTS

Almost half of your increases, $335,000, is in training grants. How will these grants be applied? Will you make grants to all of the 48 schools?

Dr. GALAGAN. To 44 of the 48 schools.

Mr. FOGARTY. Forty-eight is the correct total number?

Dr. GALAGAN. Forty-seven in actual production. UCLA has not yet admitted a class.

The increase in funds will permit the schools to extend the training in some depth; the amount of money available at the present time permits the school to provide the student with just a few weeks of training in the use of assistants.

The increase in funds will permit the schools to increase the length of time that the student is given this training, and will also enable them to provide some guidance in the training of the assistant. A large number of dental assistants must learn on the job.

Mr. FOGARTY. What is the difference between a hygienist and the assistant?

Dr. GALAGAN. A dental hygienist is a professional licensed person, with a college degree. The assistant is not licensed, does not have to finish a required course in a university discipline. The dental hygienist works somewhat independently of the dentist and is concerned largely with oral prophylaxis.

The new dental assistant, the kind we are interested in promoting and encouraging dentists to use, works at the chair with the dentist and provides him with another pair of hands to accomplish his operations.

Mr. FOGARTY. You said you make grants to 44 of the schools.

Dr. GALAGAN. Yes, sir; 44 of the 47, three schools have not applied for a grant.

Mr. FOGARTY. I see. The only other increase of consequence is $190,000 for the Dental Health Center. You talked about that.

DENTAL CARE FOR HANDICAPPED PEOPLE

What are you doing about dental care for handicapped children, chronically ill and aged?

Dr. GALAGAN. Two years ago the Congress gave us an increase to begin some pilot programs, demonstration programs, in care for the chronically ill and aged.

We have programs now in several States and communities designed to demonstrate the techniques of care and the delivery of care for this group.

In addition, with the increase in fiscal year 1962, we started pilot teaching programs in 11 of the Nation's dental schools designed to teach students how to work with these handicapped people, whether they are adults or children.

The children require special techniques and a special approach—oftentimes anesthesia and special equipment. Therefore, we thought it was a wise investment of public funds to teach the dentists of the future how to work with this group, which is an increasing component of the population.

RHODE ISLAND PROJECT

Mr. FOGARTY. You are familiar with the project we have in Rhode Island?

Dr. GALAGAN. Yes, sir.

Mr. FOGARTY. That seems to be working out very well. It was set up for the mentally retarded children. The parents at first didn't seem to take advantage of it, but they have done excellent work and gained the confidence of everyone, so they are kept pretty busy there now. And they are attempting to train some of the dentists also. That is, at the hospital.

Such a center should be near a hospital; shouldn't it?

Dr. GALAGAN. Oh, yes. You almost have to have access to a hospital, or to the kinds of facilities they have at hospitals.

Mr. FOGARTY. Most of the dentists couldn't afford to buy the equipment they need to take care of these children.

Dr. GALAGAN. That is correct.

Mr. FOGARTY. They are the most difficult to take care of. Some dentists don't have the patience.

Dr. GALAGAN. I think our approach has been modeled in great part on the Joseph Samuels clinic. Given the training and background and experience to work with these children and the facilities, the community can do a job for handicapped children whether they are mentally retarded or handicapped in other ways.

FLUORIDATION

Mr. FOGARTY. Is there anything more you want to say on fluoridation?

Every once in a while someone raises the question about the possibility of something dangerous happening. There are some people who still think something might happen to their physical well-being by drinking this water.

Dr. GALAGAN. There has been no evidence, Mr. Fogarty, in the 30 years that the Public Health Service has been working in the field, and collecting and analyzing data from here and abroad, to indicate that fluoridation affects the health of the people, except in a beneficial way.

HOME FLUORIDATORS

Mr. FOGARTY. What about the fluoridators you were trying to develop for individual homes that are not on city water supplies?

Dr. GALAGAN. As you know, we have been working for several years trying to develop a machine that would appropriately feed a small amount of fluoride into the independent water supply.

We had gone about as far as we can go in our own research laboratory in this direction and 2 years ago we negotiated a contract with Permutit, an organization concerned with treatment of individual water supplies, to develop such machinery.

They have been successful in developing a model which is extremely simple, made out of plastic, with a removable container and parts that permit easy service, which could be delivered to the population for less than $2 a month.

In their first effort to put this on the market in the Pittsburgh area, they were not able to get very many purchasers; the company has now switched its pilot effort to Montgomery County and is in the process of trying to determine the acceptability of this by homeowners.

They have not been in Montgomery County long enough yet to determine whether or not this level of cost will attract parents.

Mr. FOGARTY. I notice in your justifications you mention a project to test the effectiveness of using fluoride dentifrices in community health, in the State of Washington, will be completed in 1964.

I thought the dental association had a problem there.

Dr. GALAGAN. Yes, as you know, the American Dental Association formally endorsed one of the fluoride dentifrices a couple of years ago—an action which did create some controversy within the profession.

(Discussion off the record.)

PROGRESS IN FLUORIDATION OF MUNICIPAL WATER SUPPLIES

Mr. FOGARTY. We will place in the record the table showing the extent of fluoridation of central water supply systems during the period 1945–62.

(The table referred to follows:)

Status of fluoridation at end of each year 1945–62

Year	Fluoridation status at end of each year		Net fluoridation instituted each year	
	Number communities	Population served (in thousands)	Number communities	Population served (in thousands)
1945	6	232	6	232
1946	12	332	6	101
1947	16	459	4	126
1948	26	582	10	123
1949	49	1,063	23	481
1950	100	1,579	51	516
1951	368	5,079	268	3,501
1952	751	13,875	383	8,796
1953	1,007	17,666	256	3,791
1954	1,194	22,337	187	4,671
1955	1,347	26,279	153	3,942
1956	1,583	33,905	236	7,627
1957	1,717	36,215	134	2,310
1958	1,890	38,462	173	2,246
1959	1,990	39,628	100	1,167
1960	2,111	41,180	121	1,551
1961	2,197	42,201	86	1,021
1962 [1]	2,302	43,298	105	1,100

[1] Preliminary data.

SAN FRANCISCO FACILITIES

Mr. Fogarty. What about your facilities out in San Francisco; do the dentists still have control of that building, or has someone else gotten in there since the hearing a year ago?

Dr. Galagan. No, I think that situation has been resolved very satisfactorily from our point of view.

Mr. Fogarty. And how is it working out as far as the dentists in that part of the country are concerned?

Dr. Galagan. They are very pleased with it. As you know, the dentists in California are very complimented that we were able to start a program like this out there. And the availability of the training part of the center's program, of course, enables them to use it to a considerable extent.

Mr. Fogarty. Are they using it?

Dr. Galagan. Yes, sir.

Mr. Fogarty. The interest is there.

Dr. Galagan. Yes, sir.

Mr. Fogarty. I thought establishing that center was a good idea:

REGIONAL DENTAL RESEARCH CENTERS

I attended the meeting of the deans of the dental schools last fall. One of the questions raised by one of the deans, a former president of the American Dental Association, was about the possibility of establishing one or more regional dental research institutes or centers.

Would you care to comment on the feasibility of establishing one or more regional dental research institutes or centers.?

Dr. Terry. Mr. Chairman, I should think if such a thing were done, it would be through our National Institute of Dental Research, and not through this program.

Mr. Fogarty. But you still would have some interest, I would think. Do you want to make any comment?

Dr. GALAGAN. I think it would be highly desirable, much needed, and would disseminate and start the new focuses of activities in dental research, which the profession needs.

Mr. FOGARTY. There is a lack of research facilities and research personnel in the field of dentistry.

Dr. GALAGAN. Yes, there is.

Mr. FOGARTY. I don't know whether this is the answer or not but it seems to me something has got to be done to encourage the dental schools.

Dr. GALAGAN. As Dr. Terry indicated, this part——

Mr. FOGARTY. I realized that, but I just wanted to get your thinking on it, too. Is there anything else you would like to say?

Dr. GALAGAN. No, sir.

SURVEY OF DENTISTRY RECOMMENDATIONS

Mr. FOGARTY. Last year we talked about the report entitled "Survey of Dentistry," made by the American Council on Education, in which eminent leaders from medicine, dentistry, education, and industry participated.

We asked you then to price out the recommendations that related directly to your program and this was entered into the record.

Now, are we doing anything about these recommendations?

Dr. GALAGAN. Yes, sir, Mr. Fogarty. Our 1964 budget, in its entirety, was based on those recommendations of the "Survey of Dentistry" that were addressed specifically to us.

Mr. FOGARTY. You mean this budget comes up to their recommendations.

Dr. GALAGAN. Oh, no, sir.

Mr. HAMBLETON. The majority of that money was for construction and that was not authorized.

Dr. GALAGAN. Yes.

Mr. HAMBLETON. $67 million of that was for construction.

Dr. GALAGAN. Two of their recommendations would require legislation. One had to do with the support of the construction of new dental schools. The other was concerned with grants for dental public health programs.

Mr. FOGARTY. Let me put it another way: What is lacking in your budget that was contained in their recommendations for 1964, where there is no construction activity and no legislation is needed? In your going program now, what would you have to do in order to meet their recommendations? You can supply that for the record if you would.

Dr. GALAGAN. Very well.

Mr. FOGARTY. And the amounts.

Dr. GALAGAN. Yes.

(The information follows:)

PRICING THE SURVEY OF DENTISTRY AS IT RELATES TO DIVISION OF DENTAL PUBLIC HEALTH AND RESOURCES ACTIVITIES—ESTIMATED FEDERAL COST AND ALLOWANCES

The cost of implementing the major recommendations of the Commission on the survey of dentistry in the United States in 1964 and under existing authority would come to a total of $12,720,000. To fully carry out the recommendations an additional $75,120,000 of new legislation would be required.

Activity	Estimated cost	1964 allowance
Dental care of handicapped, homebound, chronically ill, and aged—a program of demonstrations, workshops ($1,620,000 support for curriculum development, and training $700,000)	$2,320,000	$381,000
Expansion of dental health education activities—general program expansion with particular empahsis on fluoridation and caries prevention	550,000	137,000
Incremental dental care for children—support for 8 incremental care programs for children on demonstration basis	300,000	(1)
Expansion of career development program—double the number now in the program (10)	150,000	0
Expansion of research and investigation—increased activity in behavioral research, epidemiological investigations, and technical assistance related thereto including research grants under existing authority	2,835,000	1,290,000
Training and workshops in dental research methods—project support for schools	265,000	20,000
Training of dental students to use dental auxiliaries through existing grant authority	6,300,000	2,161,000

[1] No request.

Mr. FOGARTY. Is there anything else you want to say?

Dr. GALAGAN. No.

Mr. FOGARTY. Is there anything else you want to say, Dr. Terry?

Dr. TERRY. No. Thank you very much.

Mr. FOGARTY. Thank you very much, Doctor.

We will adjourn until 10 o'clock in the morning.

WEDNESDAY, MARCH 6, 1963.

NURSING SERVICES AND RESOURCES

WITNESSES

MARGARET C. ARNSTEIN, CHIEF, DIVISION OF NURSING
DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES
JESSIE M. SCOTT, DEPUTY CHIEF, DIVISION OF NURSING
JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	1,450	1,800	2,027
(*b*) Fellowships	311	316	316
(*c*) Training	6,684	7,612	7,612
2. Research, training, and technical services	919	1,151	1,290
Total program costs, funded [1]	9,363	10,879	11,245
Change in selected resources [2]	73		
Total obligations	9,436	10,879	11,245
Financing:			
Comparative transfers from other accounts (−)	−1,888	−2,443	
Unobligated balance lapsing	93		
New obligational authority	7,641	8,436	11,245
New obligational authority:			
Appropriation	7,675	8,438	11,245
Transferred to (−)—			
"Salaries and expenses, Office of the Surgeon General" (42 U.S.C. 226)	−32		
"Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728)	−2	−2	
Appropriation (adjusted)	7,641	8,436	11,245

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[1] Includes capital outlay as follows: 1962, $8,000; 1963, $7 thousand; 1964, $7,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $10,000 (1962 adjustments, $4,000); 1962, $87,000; 1963, $87,000; 1964, $87,000.

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	604	728	801
	Positions other than permanent	17	10	5
	Other personnel compensation	2	----------	3
	Total personnel compensation	624	738	810
12	Personnel benefits	91	106	135
21	Travel and transportation of persons	84	76	100
22	Transportation of things	6	10	7
23	Rent, communications, and utilities	13	14	16
24	Printing and reproduction	14	23	19
25	Other services	103	119	95
	Payment to:			
	Bureau of State Services management fund	17	23	62
	National Institutes of Health management fund	19	23	27
26	Supplies and materials	8	8	9
31	Equipment	13	11	10
41	Grants, subsidies, and contributions	8, 445	9, 728	9, 955
	Total obligations	9, 436	10, 879	11, 245

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	107	125	132
Full-time equivalent of other positions	3	2	1
Average number of all employees	94	114	127
Number of employees at end of year	91	126	139
Average GS grade	6. 6	6. 7	6. 6
Average GS salary	$5, 849	$6, 156	$6, 105

GENERAL STATEMENT

Mr. FOGARTY. The committee will come to order.

Miss Arnstein, you are going to testify regarding the Division of Nursing?

Miss ARNSTEIN. Yes, sir.

Mr. FOGARTY. You are the Chief?

Miss ARNSTEIN. Yes, sir.

Mr. FOGARTY. Go ahead.

Miss ARNSTEIN. I have a statement which I would like to submit for the record, if that is all right, and just give a few highlights this morning.

Mr. FOGARTY. That will be fine.

(The statement follows:)

Mr. Chairman and members of the committee, I welcome the opportunity to present the budget request for the "Nursing services and resources" activity. It is through this program that we try to increase the amount of nursing services and to improve nursing practices in the Nation. Every effort is made to achieve a balance in the program. In the planning and programing, no aspect of any major need is overlooked.

The major problem areas at present are the quality of nursing service and education, the nurse supply, and the distribution of nursing services. It is primarily in these areas that the Division concentrates its efforts, through intramural research, consultation based on research and experience, research grants, and training grants.

IMPROVEMENT OF NURSING PRACTICE

Nursing services today are not adequate either in hospitals and other health facilities or in people's homes. The needs and demands are not being met. This committee is aware of the situation, and so I do not plan to take your time with a recital of the shortage figures. However, the Division has just published the 25th census of nurses in public health, which is a sober reminder of the magnitude of the job to be done in meeting people's needs for nursing care at home. The number of public health nurses employed by local public and voluntary agencies to serve the general public has not kept pace with the population growth. From 1950 to 1960, the number of these nurses rose at a national rate of only about 100 a year at a time when the population increased about 3 million a year. Only one additional public health nurse was available to serve about 30,000 additional people.

The Division is giving intensive assistance to States and communities to help them establish or extend home nursing care programs. The number of those helped is far too many to list here. As one example, however, in six adjacent counties in one State, no home nursing care programs existed 2 years ago. Moreover, the health departments in these counties could see no possibilities of expanding to give these services. Four of these counties now have home nursing programs due at least in part to our technical assistance and some important changes in attitudes and approach.

Last year I told this committee about the method developed by the Division for determining the costs of nursing care provided by small health agencies unaccustomed to charging fees. This method has since been published in a manual, and consultation on its use has already been given to some States in all but one of the nine HEW regions. The States and communities have responded with enthusiasm for this new administrative aid to improved and expanded services.

We continue to learn more but not yet enough about the effectiveness of public health nursing. We cannot meet all the requests we are receiving for consultation on the Division's new method for measuring patient progress under public health nursing. Development of this method illustrates our consultation based on research. First, the method was developed through study. Then it was tested thoroughly in six different agencies. Next, refinements are being made as the method is first applied on a wider scale by many local agencies. In this way, every effort is made to insure that the methods we recommend are most useful.

This study method is one of the most important steps forward in public health nursing practice in many years. With a way to measure patient progress, we can begin to experiment with different practices and procedures to determine which ones are the most effective, which the least effective. That is why some agencies that have tried the method have already incorporated it in their programs, and why many other agencies are literally clamoring to receive help in order to be able to use it. With our assistance, the Children's Bureau has used the method in a study of migrant families and has stimulated its use in work with handicapped children.

Methodologies have been developed and made available for studying all nursing service personnel in hospitals. Following the Division's cooperative studies in three university hospital outpatient departments, we taught the outpatient study method to nine Chicago hospitals that intend to do their own studies. The

Chicago Community Nursing Council has employed a nurse to serve exclusively as coordinator for this project, just as New Jersey recently did for a statewide study of hospital nursing activities conducted with the Division's assistance. Also this year, we conducted teaching workshops for personnel from one-third of the accredited general hospitals in West Virginia to prepare them to conduct their own nursing activity studies.

Assistance is urgently needed in other problem areas which we propose to study. Management procedures, for example, take a great deal of the nurse's time. We need to know if and how this amount of time can be reduced. Nurses in small hospitals have to perform many duties in addition to nursing. We need to know to what extent this practice jeopardizes safe patient care.

The committee is aware of the need to develop adequate nursing resources and the need to use them properly. We know from experience and study that readmission of patients to hospitals can be reduced if available nursing services are fully utilized, and we know this is not being done to the extent that it could be. In a study of patients with congestive heart failure, which has not yet been published, a physician in the Southeast found that the patients who received public health nursing service had to spend only about half the number of days in the hospital in the year of study as the patients who did not have public health nursing—359 and 625 days, respectively. We believe hospitals can be helped to have a better understanding of what nursing services patients need outside the hospital and to take a more active role in developing and using these resources. We propose to develop ways to help hospitals accomplish this.

The staff of the nursing research field center has made beginnings in the important area of communications between nurse and patient. A study is being made to determine the benefits of nurse-patient interviews, one when the patient is first admitted to the hospital, another when he is discharged. In this way, the nursing staff has the information needed to plan good care in advance, and also to arrange for additional care at home. It would be difficult to overestimate the value of this communication between nurse and patient when we consider the substantial influence which attitudes, usual behavior, and home conditions have on the patient's life at all times, including times of illness when his future health may be jeopardized unless he can be helped to adapt his behavior.

The Division's lack of clinical resources constantly hampers and delays needed studies. We believe it is important to capitalize on the resources within the Service. To do this, we are proposing a cooperative project with the Division of Hospitals which would involve placing a research nurse in a PHS hospital near a university school of nursing. This research nurse would herself conduct some studies; she also would stimulate the hospital nursing staff to conduct studies on their own and cooperatively with others, perhaps jointly with the university school of nursing. All these research activities in addition to their intrinsic worth will also enhance the hospital's opportunities to recruit badly needed nurses.

Our request is for an increase of seven positions to add five more nurse consultants and two clerical positions so that we can intensify our studies and consultation in behalf of improved nursing practice for patient care.

MANPOWER RESOURCES

As this committee well knows, the shortage of nurses dominates all considerations of nursing needs. Yet remedies for the needs and the demands is not simply a matter of numerical totals. It is, rather, a matter of obtaining needed data on quantity of manpower in relation to its utilization and using this as a basis for action. It is also a matter of assessing the influence of many complicating factors, for example, nurse mobility, part-time work, and inactive status.

This year we negotiate a contract with the American Nurses' Association for the most comprehensive inventory of the Nation's nurse supply ever conducted. The inventory will provide an enumeration of nurses by city and State, as well as other data including the nurse's specialty. We will have this information available next fall.

Also this year, a pilot study was carried out to determine the effect of refresher courses in encouraging inactive nurses to return to active practice. Cooperatively with the Chicago Community Nursing Council, we conducted a study of 453 nurses from that city and outlying suburban areas who had had refresher courses, and we found that three-fourths of them returned to active practice. Reprints of a published report of this study are being distributed widely, and we hope that this evidence will stimulate hospitals in many other communities to offer refresher courses to help meet their nursing needs.

We plan to continue our assistance in providing intensive short-term preparation in restorative nursing for staff public health nurses. In this way, the nurses become better prepared to prevent disabling conditions in patients and to restore others to maximum usefulness.

The Division's national study of the part-time nurse supply will be completed this year, as will our national study of the inactive nurse supply, to provide data needed for planning but never available to this extent.

Efforts are being concentrated on an important study to determine characteristics about the nurse supply and its mobility, and to devise methods by which needed data about nurses can be systematically collected. These data will also more clearly define the factors affecting nurse staffing in hospitals, which varies considerably from hospital to hospital.

GRANTS FOR RESEARCH AND RESEARCH TRAINING

Grants for nursing research and for research training are included in this estimate for the first time this year in a comparative transfer of funds from the National Institutes of Health. The unification of administration and programing in a single program is in harmony with the intent of the Public Health Service to integrate research with the program to which it applies.

Because this program has been financed out of NIH funds up to now, I would like to take just a minute to describe the history and growth of the nursing research grants. While an occasional research grant had been made to nursing prior to fiscal 1956, there was no identifiable program in this area. Starting in 1956, the Division of Nursing and the National Institutes of Health have been working closely together in the support of research in this important area. The first year of the program $498,000 was spent on research grants and $125,000 on research fellowships. In fiscal 1962, $1,450,000 was spent for research grants, $311,000 for research fellowships, and $95,000 for research training grants. Thus there has been a steady growth in numbers of people getting training for research and individual projects supported.

Nursing research must move forward at a pace commensurate with advances in health and medicine. Only as we obtain needed new knowledge can nursing be intelligently utilized to quickly translate advances in medicine into improved benefits for patients.

Investment by the Public Health Service in nursing research has paid handsome dividends. Many of the projects are carried out by nurse researchers, others by research nurses working with physicians and scientists from other disciplines. In one study, a physician-nurse team found that an alarming 59 percent in one group of elderly ambulatory patients made errors in taking the medicines prescribed for them. This committee is well aware of the critical influence drugs have in some chronic illnesses, and so I do not need to belabor the significance of this finding and also the need to follow it up and see what can be done to give patients more understanding of their medications.

A dramatic story is emerging from one research project designed to determine what effect skilled nursing care has on elderly patients. At the beginning, many patients were almost totally unaware of their surroundings, and practically only vegetating. Later, some of them were willing and able to take part in the living world around them. Nursing care was the variable which literally salvaged them from the throes of mental and physical deterioration.

Automation in nursing also is being studied. One attempt is being made to mechanize the recording, reviewing, and displaying of physician's orders for medications in hospitals. This is a time-consuming and exacting nurse responsibility, and if it can be safely mechanized, the nurse will be freed to give more direct care to the patient.

While progress in nursing has been steady and encouraging, the new knowledge we need but do not have far outweighs the answers we have found. Approximately the same number of new projects will be supported in 1964 as in 1963.

Nursing research fellowships and graduate research training grants are designed to increase the capabilities of nurses and nursing schools to add to the existing knowledge of nursing. Fellowships awarded to date have been at the special predoctoral level.

A woefully small percentage of nurses are equipped by training and experience to conduct research. We estimate that fewer than 500 of the more than half a million active professional nurses in the country are prepared for this work. We need to continue to provide this training if the needed projects are to be carried out especially in neglected areas, such as the administration and economics of nursing care in complex organizational settings and in areas of patient care not generally accessible to other scientists who are not in such constant attendance on patients.

Our request of $316,000 for 1964 will permit us to support the same number of fellows as in 1963. The total of 63 fellows in 1964 will include 58 full-time predoctoral and 5 postdoctoral fellows.

Graduate research training grants are designed to strengthen the capacity of universities to prepare nurses for research. The first awards of this kind were made in fiscal year 1962, to four science departments in two universities, Boston University and the University of California at San Francisco. We expect to award at least six grants to nine departments in three universities in 1963. We also were able to make a few awards for much needed experimental training projects directed toward more rapid improvement of instruction in research methodologies in graduate programs. Seven departments in as many universities in every part of the country received these awards.

Our request for 1964 is for $287,000, which is identical to the 1963 level. This will permit us to continue support for 13 science departments in universities, and continue grants for experimental training projects.

TRAINING GRANTS

The need for trained administrators, supervisors, and teachers in all fields of nursing remains acute. We estimate that in 1960, there were close to a 100,000 nurses working as head nurses, supervisors, administrators, and teachers who did not have baccalaureate degrees—the minimum professional preparation considered adequate for these positions.

Over 11,500 nurses have received support for advanced preparation under the Division's professional nurse traineeship program. This support is for full-time academic study.

Nurses and their employers are also enthusiastic about the short-term training program initiated in 1960 for nurses who cannot leave their jobs at present for full-time study. A grant this year to the New England Board for Higher Education for short-term courses represents another forward step in regional planning and action for nursing education. In all, funds were made available to support 127 short courses for 7,000 nurses in 1962.

The amount requested for training grants for 1964 is identical to the amount for 1963. This will permit us to operate the program at the current level, with $6,325,000 to support approximately 1,800 nurses in long-term training and $1 million for 7,000 nurses in short-term courses.

As the committee knows, we will hold a national conference this summer to evaluate the effects and value of the professional nurse traineeship program and report the conference's findings to the Congress. The dates selected for the conference are July 17–19, 1963. We are fortunate to have obtained the acceptance of one of the Nation's top nursing leaders to serve as chairman for the conference.

The regional nursing consultants are essential to carrying out the Division program in the field. Our request for 1964 will permit us to operate field activities at the 1963 level.

The 1964 budget request is for $11,245,000 and 132 positions, an increase of $366,000 and 7 positions over the 1963 level. This will provide $2,027,000 for research grants, $316,000 for fellowships, $7,612,000 for training, and $1,290,000 for research, training, and technical services. This will permit us to make a greater impact on the thorny problems which deter efforts to supply the best possible nursing care to the Nation's people.

Summary Statement on "Nursing Services and Resources"

Mr. Chairman and members of the committee, it is through the "Nursing Services and Resources" program that we try to increase the amount of nursing service and to improve nursing practices in the Nation. Every effort is made to achieve a balance in our activities which include intramural research, consultation based on research and experience, research grants which have been transferred from NIH, and training grants.

Manpower shortages are great in every area. For example, from 1950 to 1960 the number of public health nurses to serve the general public and give care in people's homes rose at a national rate of only about 100 a year at a time when the population increased about 3 million a year.

Through technical assistance, the Division has made it possible for many communities to develop and extend the kinds of home nursing programs they need, including some communities which only a few years ago thought it was not possible to achieve this goal. A new Division method to measure and report patient progress is the most significant development in public health nursing practice in many years, providing as it does a valid technique to determine which practices are the most effective and beneficial to patients. Assistance has been given to some States in all but one region on use of the Division's new method to determine costs of nursing service provided by small health agencies unaccustomed to charging fees.

The nursing research field center has begun studies in the important area of nurse-patient communication, first with admission and predischarge interviews so that continuity of good care can be planned in advance. A proposed project involves placement of a research nurse in a PHS hospital near a university school of nursing, to stimulate nursing research. Our request for 1964 will permit us to intensify activities to improve nursing practice.

Grants for nursing research and research training are included in this estimate for the first time in harmony with the intent of the Public Health Service to unify research and practice in a single program. Only by moving nursing research forward at a pace commensurate with advances in medicine can we obtain the new knowledge we need. Investments in nursing research by the Public Health Service have paid handsome dividends, but the number of unanswered problems exceeds the answers already found. Nursing research fellowships and graduate research training grants are designed to increase the capabilities of nurses and nursing schools to add to the existing knowledge of nursing. The request for 1964 will permit support for the same number of nurse research fellows and the same number of research training grants as in 1963.

The need for trained administrators, supervisors, and teachers in all fields of nursing remains acute. Over 11,500 nurses have completed full-time academic study under the Division's popular professional nurse traineeship program. Enthusiasm for the short-term traineeship program initiated in 1960 is also great. The request for 1964 will permit us to support the same number of nurse trainees as in 1963—1,800 nurses in full-time study and 7,000 nurses in short-term courses. Our request for administration of grants includes funds to conduct the evaluation conference for this program, to be held July 17–19, 1963. Essential field activities by the regional nursing consultants will be carried out at the 1963 level.

The 1964 budget request is for $11,245,000 and 132 positions, an increase of $366,000 and 7 positions over the 1963 level. This will provide $2,027,000 for research grants, $316,000 for fellowships, $7,612,000 for training, and $1,290,000 for research, training, and technical services. This will permit us to make a greater impact on the thorny problems which deter efforts to supply the best possible nursing care to the Nation's people.

Mr. Chairman, I shall be glad to answer any questions you may have about this program and the budget request.

General Statement

Miss Arnstein. The purpose of our program stays the same, though our methods of carrying it out differ a little bit from year to year as the conditions change in the country, and the purpose—just to review it for a moment—is, in general, overall terms, to improve nursing practice, and we do this by helping the agencies utilize their present supply of nurses better and by increasing the knowledge and skills of the nurses who are there because this makes their services extend further, too.

PATIENT PROGRESS GUIDE MANUAL

One of the tools which will be crucial in utilizing our scarce supply of public health nurses is the method of measuring the progress that patients make under public health nursing care, and we carried out the experimental phase last year. It was completed in July and in the past 8 months this method has been further developed into a guide manual, which is being tested in the field to see that people will understand the guide and can use it; and one State has used it on a statewide basis, all over the State; the different local agencies have been using this guide, and we are now waiting for the results of it. The guide will be finished, we hope, by July and published. In addition to this State, a number of single counties——

Mr. FOGARTY. What State is that?

Miss ARNSTEIN. South Carolina has used it and the Children's Bureau has used it in relation to their migrant labor program, to see what progress they are making in working with migrant labor families.

In addition to the States that have actually used it, in the individual counties, a number of States have had the method explained to them as a beginning, the first "gun" in actually putting it into use.

Three counties, I am happy to say, have already incorporated this method of keeping records into their regular ongoing record system so they will have a routine measure of the progress their patients are making.

This coming year, with the manual in hand, we expect to concentrate on promoting its use all over the United States.

Now, it takes a little time to introduce an entirely new method, and so we think that perhaps the most we can do this year is one State in each of our nine regions.

Mr. FOGARTY. What State are you going to do it in?

Miss ARNSTEIN. Well, we wait until the State takes some interest, and we respond to invitations.

Mr. DENTON. That is a good answer.

Mr. FOGARTY. You may not get any invitations from some States.

Miss ARNSTEIN. Well, we have quite a few States to start on, and I could name them, if you wish me to.

Just as soon as we send the manual to the printer, and it takes 2 or 3 months, as you know, to get it from the printer, we will announce it.

Mr. FOGARTY. Where do the invitations come from?

Miss ARNSTEIN. The State Health Department.

Mr. FOGARTY. Have you heard from the public health man in Rhode Island?

Miss ARNSTEIN. We have not had an invitation to work there yet but I am sure one will be forthcoming. They have a very lively interest in it.

COOPERATIVE PROJECT WITH U.S.P.H.S. HOSPITALS

Another quite different approach to improving utilization and practice is a cooperative project we are planning for this forthcoming year, with the Division of Hospitals in the Public Health Service. This is something quite new. The Division of Hospitals and we have made a plan to place a research nurse in one hospital this coming year, with the idea that if this works well, we will put nurses in other hospitals:

They will work with the hospital staff in making practical studies of the utilization of nurses, quality of care, and continuity of care to the patient. On the basis of these studies, the hospital will make recommendations of changes they should make in their practice, and then we will help them evaluate the results of these changes.

We hope they will pick a hospital which is near a university school of nursing, so that we can also make the hospital a practice ground for the university students, and this as you know, is a real "shot in the arm" for the hospital to have students coming in and doing studies in the hospital, and the staff of the hospital gets stimulated this way and the students also have a chance to practice.

UNIVERSITY AND HOSPITAL SCHOOLS OF NURSING

Mr. FOGARTY. What is the difference between a University School of Nursing and a school of nursing that is sponsored by the hospital?

Miss ARNSTEIN. Well, there are a number of differences. One, of course, is the very one you said, which is the administration of it. One is administered by the educational institution and the other by a service institution, so that you have different sources of support, for one thing, and different administrative goals in each type of school.

The university school has a good deal more of the fundamental sciences necessary, we think, for continuing growth in nursing.

That is, you can learn practice of nursing in a hospital school today, probably, about as well as you can in a university school, but you don't have the foundation that helps you change as the medical practice changes.

There is research in medicine these days, which is so enormous and so rapid that if you don't have some basic science foundation, you have a hard time figuring why you have to do things differently next year, than this year.

Mr. FOGARTY. Nurses that graduate from this hospital school of nursing haven't nearly as good a foundation as the university school graduate?

Miss ARNSTEIN. Well, we need both. Many of the hospital graduates, as you know, go on and get their degrees later and go on to advanced work and this is a more costly way of getting your degree than any other way.

Mr. FOGARTY. It is more costly to go to a university than a hospital school of nursing, isn't it?

Miss ARNSTEIN. Yes, sir; but in the long run if you want your degree, it take you 5 to 6 years to get your degree by going to a diploma school first and a collegiate school afterward, and it takes you 4 years if you go direct.

Mr. FOGARTY. I guess the ideal would be to get both, be a nurse and have a degree, but right now, you need nurses.

Miss ARNSTEIN. I agree, and we think that both have to expand; both the hospital schools and the university schools have to expand.

Now, alongside of the education in principles and facts we know now, the future improvement of nursing practice rests ultimately on the discovery of knowledge, new knowledge, in nursing, just as it does in medicine or any other field. We need to know how nursing affects patients' reactions to medical treatments, to the medical regimen. We need to know how nursing can help the patients to benefit from all of the new life-saving, but also terrifying-looking procedures and equipment which are around them today. You may have seen some of it.

We also need to know more about the kind of people who will make the best nurses and will study nursing and who will be able to practice to the best effect.

We need to know more about this type of thing so that we can reduce the school dropouts which have remained, for years, at about a third of the people who enter. And yet, some schools have as low a dropout as 12 to 15 percent, so we think if some can select students so that there is only a 12- or a 15-percent dropout, we ought to be able to learn how to select better in the others so we don't have a 33-percent dropout.

RESEARCH GRANTS PROGRAM

The research grants program supports investigations in all these areas. We have had a research grants, and fellowships program in the Division of Nursing in cooperation with the National Institutes of Health for the past 7 years.

This was first with the Research Grants Division, and then with the Division of General Medical Sciences. Their funds supported this research but our Division did what we call the programing for it. The funds for the first time, this year, are included in our budget.

I thought you might like one or two examples of the type of research which has been supported by the grant funds in the past. These will illustrate the potential of the program as we see it in the future.

MEDICATION MISTAKES BY ELDERLY PATIENTS

One study, which was a joint study of a physician and a nurse, was investigating to what extent the elderly patients who came to a large outpatient department were following the orders the way the doctors thought they were following them; and the nurses interviewed them as they came back and asked them questions which elicited whether they were taking the medications that were prescribed, and what their medications were, and so on; and they found that 59 percent of them were making mistakes and some of them were making very serious mistakes.

Mr. DENTON. Do you mean they were not taking the right kind of medicines?

Miss ARNSTEIN. They were making all kinds of mistakes. Sometimes, it was not the right kind; sometimes they were not taking it at the right time of day; sometimes taking medication the physician thought he had stopped, and they still had a few pills left and were still taking them.

There is one example that is amusing if it were not so serious. One patient thought the big pill was for the big pain, and the little pill was just to take every day, and it happened that the big pill was a vitamin pill that you are supposed to take every day. The little pill was nitroglycerine, which was for angina pectoris, coronary attacks. He was taking the nitroglycerine three times a day, and he was taking the vitamin pill when he had a coronary attack.

Well, as I said, it is funny, but it is not funny.

Mr. FOGARTY. Are these all public health nurses?

Miss ARNSTEIN. The ones who were doing the investigating in the outpatient department were public health nurses.

Mr. Fogarty. What kind of nurses were working in the outpatient department, are they trained nurses?

Miss Arnstein. They have both; and they have aides, too. Now, this was a breakdown all the way along. I mean, the physician gave the orders; nobody followed up on it.

Mr. Fogarty. In an area like that, they have a trained nurse, and the practical nurse, and the aide?

Miss Arnstein. Yes, sir.

Mr. Fogarty. Who would be responsible for seeing that they get the right medications, the trained nurse or the practical nurse or the aide?

Mr. Laird. It is like the Government in those hospitals. You would have a hard time pinning down the responsibility.

Miss Arnstein. That's right.

Mr. Fogarty. All right. Go ahead.

Miss Arnstein. In two other projects, nurses are investigating the effect of the nursing actions on the relief of pain and this, again, is a very important area. If they can relieve pain sufficiently that the patient does not need so many narcotics, this makes the whole recovery easier, and avoids some of the dangers of drug addiction which occur sometimes in the beginning quite legitimately, because there was real pain. We have no results from these two studies yet. They are ongoing.

NONNARCOTIC PAIN KILLERS

Mr. Fogarty. There was some pain killer developed a couple of years ago that was supposed to be better than narcotics; it was supposed to take the place of some narcotics.

Dr. Terry. There are several preparations that are nonnarcotic.

Mr. Fogarty. The NIH developed the one I am thinking of.

Dr. Terry. Yes, sir. There are several that have been developed. One of the difficulties is that, commonly, even with those which are nonnarcotics, there is a habit-forming tendency.

Mr. Fogarty. Is that so?

Dr. Terry. I am not sure what the latest is on some of these investigations in that respect, but demerol is an example; it is a nonnarcotic drug used for the relief of pain.

Mr. Laird. That was not developed by NIH.

Dr. Terry. No. I was just citing an example of a nonnarcotic drug. It has had a great deal of testing in our reserach laboratory in Lexington.

Mr. Fogarty. But NIH has developed two or three that they talked about in the past.

Dr. Terry. Yes.

HOME CARE OF PATIENTS

Miss Arnstein. Another totally different area of investigation is the use of the practical nurse and the aid in the care of patients who are sick at home and we need more information about when they can be used safely; when they can do an adequate job; and when you need the public health nurse. One of the visiting nurse associations has a research grant to try and draw up some specifications and guidelines that others can use which will stretch our scarce nursing supply again.

The research grants and fellowships program also supports the training of nurses in research and the strengthening of our university programs.

TRAINING GRANTS

In research training, this program has grown slowly but steadily over the past 7 years, and as more nurses become prepared we anticipate that the number of knotty nursing problems that we will tackle will increase, and that we will be able to come up with a sounder base for our nursing practice and will not need to rely as much on womanly intuition, good as that is.

The traineeship program continues to assist in the preparation of nurses for positions of responsibility in the teaching, supervision, and administration fields. By the end of this year, over 11,000 nurses will have received some assistance in completing their college work to prepare them for these fields. Another 13,000 will have had a week or more of concentrated short course study to help them now on the job.

In July, as you know, a conference to evaluate this program will be held as specified in the law.

I think it is obvious to you that our budget, which is presented, does not take into account the recommendations of the Surgeon General's consultant group on nursing, whose report just became available on the 24th of February.

This, in brief, is our nursing program.

BUDGET REQUEST

Mr. Fogarty. The appropriation for 1963, for activities included in the 1964 budget, is $10,879,000 and the request for 1964 is $11,245,000, an increase of $366,000 and seven positions.

What activities are included in the comparative transfer of $2,443,000 from "General research and services, NIH"?

Miss Arnstein. The research grants and review and approval for $1,840,000; the fellowships, $316,000; and the research training—strengthening the programs in training in research at universities—$287,000.

IMPROVEMENT OF NURSING PRACTICES

Mr. Fogarty. The only increase you are requesting that involves positions, is $47,200 and seven positions for "improvement of nursing practices." Tell us what the need is in this area.

Miss Arnstein. These will be used partly for the promotion of this patient progress study, which I spoke of, across the country. We have 1½ people assigned to this now, and they cannot possibly cover the country in the way I said.

Two other positions will be used in our cooperative studies in the Division of Hospitals, which I spoke of, and the others will be used to promote some of the other studies I did not mention: outpatient study; nursing activities in inpatient units in the hospital, which are ongoing programs, so that I did not talk about them this year. I would be glad to explain them further if you wish.

Mr. Fogarty. Are these studies made in the private hospitals?

Miss Arnstein. Yes, sir.

Mr. Fogarty. At their request?

Miss Arnstein. Yes, sir.

Mr. Fogarty. You don't just move in on anyone?

Miss Arnstein. No, sir.

SIZE OF RESEARCH GRANT PROGRAM

Mr. Fogarty. Most of the requested increase is $227,000 for research grants. This is just about the amount needed to level off the program, isn't it?

Miss Arnstein. It will not allow any increase in new grants over what we had this year.

Mr. Fogarty. Don't you think you could use some more money in this area of research grants to good advantage?

Miss Arnstein. This was based on the overall needs of the program, balancing all needs.

Mr. Fogarty. That is all you can wisely use?

Miss Arnstein. It is always very hard to predict about research grants, as to how many good ones will come in to be financed. It is a very difficult thing to predict.

Mr. Fogarty. I would think in the field of nursing, you would have many more applications, because of the serious shortage and also the great interest in the area. And if there isn't that interest among those qualified to make applications for research grants, there is something wrong.

Miss Arnstein. There is a tremendous interest. One of the blocks is that there are not enough people prepared to do research. It is a very lengthy preparation, as you know.

Mr. Fogarty. I can think of hospitals and hospital schools of nursing that I am sure are in a position to do more research if they had funds. I am thinking about two in Rhode Island right now that have good hospital facilities and good schools of nursing. We think they have, anyway.

Miss Arnstein. Yes.

Mr. Fogarty. And they are pretty much up to date on everything.

Miss Arnstein. Yes.

Mr. Fogarty. Aren't such schools interested in these grants?

Miss Arnstein. I think we may well have more applications than we can support. I frankly hope we do.

Mr. Fogarty. What is the past experience?

Miss Arnstein. We have been under a large budget at NIH which is more flexible than our own budget. So far they have been able to fund all good grant applications.

Mr. Fogarty. Do you think you are going to be able to fund every application you are going to get in 1964?

Miss Arnstein. I am not at all sure that we will.

Mr. Laird. Every one they get; is that what you said?

Mr. Fogarty. Yes. I meant every approvable application.

This would give you funds for 17 new grants for 1964; the same as for 1963, so you are not making any headway. You are leveling off rather than making progress.

RESEARCH RESULTS

On page 258 you say: "Investments made by the Public Health Service in extramural nursing research have paid handsome dividends."

What are some of these dividends?

Miss ARNSTEIN. The study of patients in the outpatient department which I quoted to you is one of the ones.

Another one is a study made of elderly patients, who had regressed to what one might almost call a vegetive state. They were just barely eating and sleeping, and, of course, had to be cared for, and were not enjoying life at all—it was hardly worth keeping them alive, and——

Mr. FOGARTY. Who makes that decision?

Miss ARNSTEIN. I don't believe it is within the province of any human being——

Mr. FOGARTY. And once the decision is made what do you do about it?

Miss ARNSTEIN. Through nursing care alone, most of these patients were brought back to not only living, but becoming a part of the community; being able to play games; being able to take up some occupational therapy; being able to interact with their families who come to visit them, and we call these handsome dividends.

If they are going to live another 10 years, they might as well really live, and this has been an example to others in the country. We think we can help others adopt the same methods, so that, instead of the improvement being in one hospital, it can occur all over the country.

Now, there is another hospital that is reporting quite similar findings from using some of the same methods, so these are two examples of actual action that has been taken as a result of research.

The study that I quoted to you of the outpatient department; they are not only changing the teaching of the patients; they are going to change the method the pharmacist has of marking the drugs, so that, instead of having a bottle with O16789 on the label, it will have heart medicine on it, or headache medicine or stomach medicine, and will read: "Take three times a day," or "Take twice a day." This has sometimes not been true in the past.

Now, the physician has to put this on his prescription, in order that the pharmacy can carry it out, so it is not just changing the pharmaceutical practice; it is changing also the physician's understanding of what the patient needs to know.

CHANGE OF EMPHASIS IN FELLOWSHIP PROGRAM

Mr. FOGARTY. You have no increase for fellowships but on page 259 you say, "A new program to be emphasized in 1964 is a postdoctoral research fellowship program for nurses." What is being cut back to make it possible to start this new program?

Miss. ARNSTEIN. We will have to support fewer nurses working toward their doctorates in order to support a few in doing the beginning research after they have their doctorates.

It is like an apprentice program. A nurse, when she is finished, like everybody else, when they finish their doctorates, whether it is a chemist or a physician, whoever they are, has done just one piece of research for their dissertation. This is not enough to qualify them to direct research, to dream it up and design it; so that it has always been considered advisable to put them as an apprentice to somebody who is already an experienced researcher, and in order to do this, they have to have some kind of stipend.

Mr. FOGARTY. Is it the experience that almost all nurses who get their doctorate stay in the field of nursing?

Miss ARNSTEIN. It is so far. I think 100 percent have stayed. This is partly because nurses go for their doctorates rather late in their lives, but they are beginning to go younger, which we approve of.

Mr. FOGARTY. Why is the postdoctorate more important than the doctorate?

You are taking away from the doctorate program to establish the postdoctoral research fellowship program.

Miss ARNSTEIN. We have seen these nurses who get their doctorates and before they can take positions for which they are not ready, they are employed as principal investigators. Then they have an awful struggle and need quite a lot of consultation and help. We thought that if we could support a few for postdoctoral study for a year or two——

Mr. FOGARTY. How many do you expect to support in 1964?

Miss ARNSTEIN. We estimated three or four.

Mr. FOGARTY. And how much apiece?

Miss ARNSTEIN. About $4,000 to $5,000 apiece.

Mr. FOGARTY. How does that compare with the fellowship program at NIH?

Miss ARNSTEIN. I think it is about the same for postdoctorals. Isn't that so?

Dr. TERRY. I don't know.

Miss ARNSTEIN. I think so.

EVALUATION CONFERENCE

Mr. FOGARTY. You are requesting $23,000 to conduct an evaluaiton conference on the professional nurse traineeship program. Tell us something about the kind of conference you plan.

Miss ARNSTEIN. This conference is already being planned.

We have working committees that have had one meeting and we will have another meeting this month. We are collecting the data that they have indicated will be needed by the conferees, and they will review it with us later this month, and it will be sent out in a source book, as we call it, for the use of all the conferees.

We expect to have a total of between 50 and 60 conferees who are chosen from the fields of nursing, hospital administration, medicine, citizens at large, and the field of education; I think those are the main fields. They will come together in the middle of July to review the program to see what accomplishment it has had, and to try and estimate what the needs are in the future for this particular program.

SURGEON GENERAL'S CONSULTANT GROUP ON NURSING

Mr. FOGARTY. Last year, you told us about the Surgeon General's consultant group on nursing. The report was just made last month so this budget does not reflect any of the findings of this committee.

What were some of the more specific recommendations in this report?

Miss ARNSTEIN. They recommended a whole series of things. One of the first was that there should be a thorough study of the whole system of nursing education, which would be undertaken by a representative group, spearheaded by the nursing profession, but representing many nonnurses and aided by the Federal Government, but without the Federal Government being in charge.

They saw that the present system of nursing education had grown, one might say, a little like Topsy; that there are three different routes to get to be an R.N.; and that these need a new look and there ought to be a thorough appraisal—perhaps a study—that would take perhaps 4 or 5 years, or more, to come up with recommendations of a new system of education.

Then, in the meanwhile, they did not think we should wait for the results of this study because there are plenty of needs that are quite apparent, and they recommended stimulation of recruitment to schools of nursing, and felt that Federal aid was needed in this area; that while the National League for Nursing has a committee on careers, with representatives of the American Hospital Association and others on it, it has not had the funds to do an all-out recruitment program; nor the funds to study the best ways to approach recruitment, what the problems are, and all that is needed in recruitment. And so they recommended that Federal funds should be made available to enlarge this recruitment program.

They further recommended that there should be funds to meet construction needs for new schools because they saw the need for a substantial expansion in our schools of nursing, both the diploma and collegiate.

They recommended that the collegiate graduations be doubled from 4,000 to 8,000 and the diploma graduations be increased by one-half; from 25,000—it is a little more than one half—to 40,000.

In order to do this, as I said, they knew that additional schools would be needed and that the present schools would need additional educational buildings.

They recommended that loans be made available for the nurses in both the diploma and collegiate schools and also that a limited number of scholarships be made available to the collegiate schools and they thought of this as the national merit type of scholarship which would highlight the need for academically good high school students to go into nursing.

Now, if you keep in mind the proportions, they are still not thinking of the largest proportion going into collegiate schools. It is going from 4,000 to 8,000, but the schools are not getting a fair proportion of the academically able high school students. They thought that a merit scholarship would not only give the students the funds that they needed but would also put the limelight on the collegiate schools. This is an area where good students are needed.

Now, do you want me to go through all of them?

Mr. FOGARTY. Cover the most important ones. What you think are the most important ones.

Miss ARNSTEIN. I did pick out the ones that I thought were the most important, but there are several more.

RECOMMENDATIONS THAT DO NOT REQUIRE LEGISLATION

Mr. FOGARTY. Now, pick out the ones that don't require legislation.

Miss ARNSTEIN. Well, loans and scholarships for basic students will both require legislation.

They also recommended some amendments to the present professional nurse traineeship program.

Mr. FOGARTY. That requires legislation.

Miss ARNSTEIN. That would be legislation, too.

Mr. FOGARTY. Let's talk about some of the recommendations that do not require legislation.

RECRUITMENT OF NURSES

Miss ARNSTEIN. The recruitment one is the one I picked first, in which we would need additional funds, because we have nothing in the budget now to help with recruitment.

Mr. FOGARTY. How much would you need to carry out the recommendation of this group on recruiting?

Miss ARNSTEIN. I don't think we made an estimate on that, yet. Can we supply that for the record?

Mr. FOGARTY. Yes.

Mr. LAIRD. What did you request in this area for recruitment in your budget submission to the Department?

Miss ARNSTEIN. We did not request anything.

Mr. LAIRD. You must have had some awareness of this problem at the time this budget was prepared.

Dr. CHRISTENSEN. This budget was not based upon the findings in the report.

Mr. LAIRD. I know that. I am not talking about that. Certainly the people that are familiar with this program, must have had some awareness of this problem, before this committee made its finding.

Miss ARNSTEIN. We did, sir.

Mr. LAIRD. What did you ask for?

Miss ARNSTEIN. We did not ask for any specific funds to help in the recruitment effort, and I think, perhaps, we were remiss in not realizing that this was a proper function of our Division.

I think the Surgeon General's consultant group made this very clear—to me, at any rate.

Mr. LAIRD. Whose responsibility did you think it was prior to this committee's recommendations?

Miss ARNSTEIN. The professional nursing organizations.

Mr. FOGARTY. You mentioned recruitment is one recommendation that doesn't need legislation to be implemented.

Will you supply, for the record, the amount that it would take to meet the consultants' recommendation.

Miss ARNSTEIN. Yes, sir.

(The information follows:)

Recommendations of the Surgeon General's Consultant Group on Nursing which would not require legislation for implementation

	Estimated requirements				
	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
STUDY OF NURSING EDUCATION					
Recommendation: A study should be made of the present system of nursing education in relation to the responsibilities and skill levels required for high-quality patient care. This study should be started immediately so that nursing education programs can benefit as soon as possible from the findings. Funds for such a study should be obtained from private and Government sources. Estimated requirements	$150,000	$150,000	$150,000	$150,000	$150,000
STIMULATION OF RECRUITMENT TO SCHOOLS OF NURSING					
Recommendation: The Public Health Service should expand its efforts and give financial and other assistance to State, regional, and national agencies for recruitment programs for nursing and other health personnel. Estimated requirements	490,000	760,000	940,000	1,150,000	1,210,000

Mr. FOGARTY. What other recommendation is there, that does not require legislation?

EXPANSION OF TRAINEESHIP PROGRAM

Miss ARNSTEIN. They recommended that the present traineeship program should be expanded, gradually, over the next 5 years, until it was doubled by the end of the 5 years.

Mr. FOGARTY. And how much would that amount to in 1964?

Miss ARNSTEIN. I have those figures.

Mr. FOGARTY. Do you have that?

Miss ARNSTEIN. In 1964, this would be an additional $2,750,000.

Mr. FOGARTY. $2,750,000; and what would it be in 1965?

Well, supply for the record, for the 5 years, what it would take.

Miss ARNSTEIN. Yes, sir.

(The information follows:)

Recommendations of the Surgeon General's Consultant Group on Nursing which would not require legislation for implementation (present authority expires June 30, 1964)

	Estimated requirements				
	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
ASSISTANCE TO PROFESSIONAL NURSES FOR ADVANCED TRAINING					
Recommendations:					
Long-term: The present Federal programs of Professional Nurse Traineeships administered by the Public Health Service should be extended and gradually increased to at least double (within a 5-year period) the present number of full-time trainees. The duration of the traineeship should be extended to cover the period prescribed for the individual trainee to complete the program of study. In the administration of the program greater emphasis should be given to the support of candidates for the doctoral degree. Estimated requirements	$2,250,000	$3,300,000	$4,320,000	$5,340,000	$6,425,000
Short-term: The present funds for short-term training in the Professional Nurse Traineeship Program should be doubled immediately and increased as needed thereafter; these increases should in no way reduce funds appropriated for full-time traineeships. Estimated requirements	500,000	1,000,000	1,000,000	1,000,000	1,000,000
Total	2,750,000	4,300,000	5,320,000	6,340,000	7,425,000

EXPANSION OF NURSING CONSULTATION SERVICES

Miss ARNSTEIN. They recommended that our own intramural program be expanded substantially. They said they thought what we had done, in improving nursing service in hospitals in which we have been able to work, and in public health agencies, ought to be made available to many, many more hospitals and agencies and for this we would need a larger staff. They thought the studies we had done which make these particular action programs possible ought to be expanded into new areas, and for that, we would need a large staff.

Mr. FOGARTY. They did not give any estimate as to how much you should increase this program or what it would cost?

Miss ARNSTEIN. No, they did not.

Mr. FOGARTY. Do you have an estimate?

Miss ARNSTEIN. Well, we can supply you with that.

Mr. FOGARTY. Supply it for the record.

(The information follows:)

Recommendations of the Surgeon General's Consultant Group on Nursing which would not require legislation for implementation

	Estimated requirements				
	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
CONSULTATION AND OTHER SERVICES TO HOSPITALS AND HEALTH INSTITUTIONS AND AGENCIES					
Recommendation: Additional funds should be made available to expand those Public Health Service programs which provide consultation and other services to hospitals and other health institutions and agencies to improve the quality and quantity of patient care through better utilization of nursing service personnel and other appropriate methods. Estimated requirements	$210,000	$260,000	$310,000	$310,000	$310,000
INTRAMURAL RESEARCH PROGRAM					
Recommendation: Funds for the Public Health Service intramural program of research in nursing should be doubled, with future increases as the need arises. Estimated requirements	300,000	500,000	850,000	1,050,000	1,550,000

INCREASED RESEARCH AND TRAINING GRANTS

Mr. Fogarty. What is the next one?

Miss Arnstein. They wanted the funds for our nursing research grants and fellowships program to be increased to provide immediately for 100 new full-time research fellows, and we now have funds for 15 new research fellows this year.

Mr. Fogarty. How much did that amount to for 1964?

Mr. Hambleton. $316,000 for 1964 is the amount we have in the budget.

Miss Arnstein. $316,000. That is right. It supports 63 in all, and we anticipate that 15 will finish and it will be available for 15 new ones.

Mr. Fogarty. Well, to meet the recommendations of this report, how much additional would you need in 1964?

Miss Arnstein. It is about $4,000 apiece.

Mr. Fogarty. Well, figure it out and put it in the record.

Miss Arnstein. Yes, sir.

(The information follows:)

Recommendations of the Surgeon General's consultant group on nursing which would not require legislation for implementation

	Estimated requirements				
	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
RESEARCH PROGRAM					
Recommendations: Funds for the Nursing Research Fellowship Program of the Public Health Service should be increased to provide immediately for 100 new full-time research fellowships. This number should be increased as additional qualified nurses apply. Estimated requirements	$175,000	$300,000	$425,000	$550,000	$675,000
Funds for the Public Health Service program of extramural research grants in nursing should be substantially increased. The increase should provide for a larger number of research grants and support more varied types of investigations. More consultation on nursing research methodology should be provided by the Public Health Service, and schools of nursing should be eligible for research development grants. Estimated requirements:					
Extramural consultation	30,000	75,000	120,000	180,000	230,000
Research grants	200,000	500,000	700,000	800,000	1,000,000
Special developmental research Training grants	120,000	240,000	360,000	480,000	600,000
General research support grants	75,000	150,000	200,000	250,000	300,000
Nurse scientist graduate Training grants	340,000	580,000	820,000	1,060,000	1,300,000
Total	940,000	1,845,000	2,625,000	3,320,000	4,105,000

Summary table

	Estimated requirements				
	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
1. Study of nursing education	$150,000	$150,000	$150,000	$150,000	$150,000
2. Stimulation of recruitment to schools of nursing	490,000	760,000	940,000	1,150,000	1,210,000
3. Assistance to professional nurses for advanced training [1]	2,750,000	4,300,000	5,320,000	6,340,000	7,425,000
4. Consultation and other services to hospitals and health institutions and agencies	210,000	260,000	310,000	310,000	310,000
5. Intramural research program	300,000	500,000	850,000	1,050,000	1,550,000
6. Research program	940,000	1,845,000	2,625,000	3,320,000	4,105,000
Grand total	4,840,000	7,815,000	10,195,000	12,320,000	14,750,000

[1] Present authority expires June 30, 1964.

Mr. FOGARTY. This is a very necessary program, isn't it?

Miss ARNSTEIN. Yes, sir.

Mr. FOGARTY. Do you not have many more applications than you can fund in this area?

Miss ARNSTEIN. It would be another $350,000 to $400,000.

Mr. FOGARTY. What is the next one?

Miss ARNSTEIN. That the extramural research grants should be substantially increased, and that we should supply more consultation services to the potential grantees. Those are the major recommendations.

Mr. Fogarty. So you are in kind of bad shape as far as this report is concerned. Your Division is a long way from being able to carry out these recommendations, are you not?

Miss Arnstein. Yes, sir. That is what we thought.

LEGISLATION NEEDED FOR PROJECT GRANTS PROGRAM

Dr. Christensen. Mr. Chairman, I think there is one other recommendation which is extremely important although it does fall into the category of requiring some new legislation. That is the authorization or the request for project grants so that studies may be made on the utilization of nurses. This is an extremely important area, which was mentioned earlier. I think this is a very important recommendation resulting from the study.

Mr. Fogarty. Well, our committee cannot do much about it unless we have the authority.

SHORTAGE OF NURSES

Do all the voluntary groups concerned with the nursing problem agree that there is a shortage of nurses?

Miss Arnstein. Yes, sir.

Mr. Fogarty. Do all medical groups agree?

Miss Arnstein. Yes, sir.

Mr. Fogarty. The AMA?

Miss Arnstein. Yes, sir.

Mr. Fogarty. Is there anyone in the country that will argue that there is not a shortage of nurses?

Miss Arnstein. I have never heard of any.

Mr. Fogarty. And, apparently, the way we are going down the same old road, there will be a shortage of nurses as long as we live, unless we step up some of these activities, expecially these research programs. Is that a fair statement?

Miss Arnstein. I think it is.

Mr. Fogarty. Is there any opposition from any medical group in the country to these programs being carried out?

Miss Arnstein. Absolutely none.

Mr. Fogarty. Well, I am surprised at the conservative budget that you are proposing this year, in view of the shortage all over the country, in the nursing field. I hear all the time of people having an awful time getting nurses, especially around the clock, when they need them.

I think this is a clear-cut example of a problem too big for the profession to solve unless the Federal Government steps in and helps. With no more help than is given now, it is going to get worse instead of better. That is my own conclusion.

LOW PAY OF NURSES

This is a rather old item but it appeared since we held our hearings last year. On June 14 this article appeared in the Wall Street Journal.

> Angry nurses: They fight for raise in pay, split with M.D.'s on medical care issue. Mass resignations back up demands; hospitals plead they're short of funds. Does shortage affect care?

It starts off by saying:

> "Everybody harps about schoolteachers, "says a slim, middle-aged nurse from Ottumwa, Iowa, "but we're a lot worse off than they are."

I have heard other nurses say the same thing. Is that right?

Miss ARNSTEIN. In many areas of the country, that is correct. Not everywhere, but in many areas, nurses are not paid commensurately with the schoolteachers.

Mr. LAIRD. We have a Federal program suggested to help increase the pay for schoolteachers. I wonder why the nurses were left out of that program?

Miss ARNSTEIN. Sir, I certainly would wonder, too.

Mr. FOGARTY. Do you have liaison with these groups, like the American Nursing Association?

Miss ARNSTEIN. Oh, yes. We work with them on joint program items. For instance, jointly, we are making a national inventory of nurses this year.

Mr. FOGARTY. Mr. Denton.

TRANSFER OF ACTIVITIES FROM NIH

Mr. DENTON. Mr. Kelly, under which category of the appropriations for NIH did this sum of $2,443,000, which was transferred to the Nursing Service, come?

Mr. KELLY. "General research and services," I believe.

Miss ARNSTEIN. The Division of General Medical Sciences.

Mr. KELLY. Yes. General Medical Sciences. It was in an appropriation formerly called "General research and services."

Mr. DENTON. That is what it is still called, is it not?

Mr. KELLY. No. I think we changed this year to General Medical Sciences. I thought we changed the name of the appropriation.

Mr. DENTON. Mine still is "General research and services."

GRANT REVIEW PROCEDURES

Now, they have a Board over at the NIH that passes on these projects which I believe you said were for research and for fellowships?

Miss ARNSTEIN. That is right.

Mr. DENTON. The Board at NIH passes on that?

Miss ARNSTEIN. There is a Nursing Research Study Section which has existed since 1956, and which is made up of people competent in the fields of nursing research, and they make the technical review of the applications, and then they are referred to the National Advisory Health Council, who gives the final approval or recommendation to the Surgeon General.

Mr. DENTON. Now, they are all under NIH?

Miss ARNSTEIN. For administration; but we are asked for the suggestions as to who should be on these.

Dr. TERRY. Mr. Denton, by "they", you mean, "they are all."

Mr. DENTON. Yes.

Dr. TERRY. The Nursing Advisory Health Council is not. Or if you say "they," referring to the grants, they have been administered under this.

Mr. DENTON. I thought you had one Board, which was, I thought, the Division of Research Grants, that took all the projects that came in, and passed on them, and if it is cancer, they referred it to the Cancer Advisory Council; if it is heart trouble, it is referred to the Heart Council, and so on.

Am I right about that?

Dr. Terry. That is correct, for the preliminary review. Yes, sir.

Mr. Denton. That is all under NIH?

Dr. Terry. That is right, sir.

Mr. Denton. These particular grants for research and fellowships are processed that way?

Mr. Kelly. Yes, sir. Research grants follow the exact, same technique.

Dr. Terry. They have the same sort of review, dual review by the Study Section and final approval by the Council.

PREVIOUS ADMINISTRATION OF RESEARCH GRANT FUNDS

Mr. Denton. Now, the Nursing Service has been making those research grants and fellowship grants themselves for a long time, have they not?

Miss Arnstein. No. We have done—I don't know another word to call it—programing. We respond to people's requests for assistance. We stimulate interest. We inform people that the funds are available and how to make application.

Mr. Denton. Now, wait. Just a minute.

Last year, you had $1,800,000 for research grants, and this year. you asked for $2,027,000 for research.

Mr. Kelly. That $1,800,000 is part of the $2,443,000 which you referred to earlier, Mr. Denton.

These are the funds which have been in the appropriation for the National Institutes of Health. We are proposing to put them here.

Mr. Denton. I get it. The Nurses' Service did not make grants outside for research or for fellowships before this year.

Mr. Kelly. No. I do think, though, that we ought to say to you, that even though this item was in the National Institute of Health budget before, and although they administered it by the receipt of the documents, by sending them to the Study Section, by appointing the Study Section, and by getting it through the Advisory Council, they consult with what you might call the NIH professional intramural staff in the review and processing of projects. This is to determine which ones have the highest priority and what the program involvement is. They have utilized the staff of this Division for that purpose for years and this constitutes, for their purpose, the intramural staff for consultation.

Mr. Denton. They did that before this transfer was made and they are doing it now.

Mr. Kelly. That is correct. The purpose of making this transfer is to make it a clear presentation to you—what we are requesting funds for—and not just have it embodied as part of the NIH working budget.

Mr. Denton. Now, all of these transfers that have been made do not change the overall program much.

Mr. Kelly. Yes, sir.

Mr. Denton. I cannot see where they changed anything very much.

Mr. Kelly. Only in that they are brought out more clearly for your attention, and in the case—not of this one—but in the case of certain of the others, the intramural staff that will be concerned with these will change.

Mr. DENTON. I realize it is nothing but a bookkeeping transaction but it does make it confusing for us when we go back and look at the budget for last year; it certainly is confusing.

Mr. KELLY. In the year in which you do bring about such a change, you do create this kind of confusion, but I do believe, that in the subsequent years, it will be to your advantage in the review of the budget.

LOCATION OF STAFF

Mr. DENTON. You have 18 regional nurse consultants. Now, I believe they must be out in the regional offices, are they not?

Miss ARNSTEIN. There are nine nurses and nine secretaries. One in each region.

Mr. DENTON. You now have 125 employees, including that 18?

Miss ARNSTEIN. That's right.

Mr. DENTON. Would the balance be here in Washington; 107?

Miss ARNSTEIN. We have three in our field center, San Francisco.

Mr. DENTON. The rest are here?

Miss ARNSTEIN. Yes.

Mr. DENTON. You have 104 here?

Miss ARNSTEIN. Yes.

Mr. DENTON. What do the three out at San Francisco do?

Miss ARNSTEIN. They are doing research and we put them out there so they can concentrate on research and not be distracted by all the things that go on here in Washington.

Mr. DENTON. What kind of research do they do, improvement in nursing?

Miss ARNSTEIN. Yes, sir.

Mr. LAIRD. They would get distracted here in Washington. That is true of a lot of programs. They do better research out in the field stations.

Mr. DENTON. Where is the office in Washington, in the South Building?

Miss ARNSTEIN. Our office?

Mr. DENTON. Yes.

Miss ARNSTEIN. It is in temporary R Building, which is across the street from the North Building on Jefferson Drive.

Mr. DENTON. That is one of the wooden buildings over there?

Miss ARNSTEIN. That's right.

IMPROVING NURSING PRACTICES

Mr. DENTON. Now, you have 43 working in improving nursing practice?

Miss ARNSTEIN. That's right.

Mr. DENTON. You are asking for seven more. Why do you need seven more?

Miss ARNSTEIN. Because we hope to expand our program a little. Two of them will be used in the cooperative project with the Division of Hospitals. Three of them will be used in our applications of finding out how much patients progress under public health nursing care; that is, getting more States, more communities to use this method. And the other two will be used in applying our nurse utilization and outpatient department study methods in hospitals.

MANPOWER RESOURCES ACTIVITIES

Mr. DENTON. You have 48 doing manpower resources work. What do they do?

Miss ARNSTEIN. Some of those are statisticians and some of them are nurses. We are trying to find out some facts on which we can base our future actions.

This year we are making a study of inactive nurses, which is a nationwide study, and this study has asked the inactive nurses: Do you plan to come back to work? Under what circumstances would you come back to work? Would you need refresher training, and so forth. There is a whole questionnaire.

Mr. DENTON. Those are nurses who got married and quit the practice or something like that?

Miss ARNSTEIN. That is right. We call them inactive. They are very active in the home.

Mr. LAIRD. Would you yield on that point?

Mr. DENTON. Yes.

Mr. Laird. How big a sample do you use?

Miss ARNSTEIN. We have 30,000.

Mr. LAIRD. Who recommended that big a sample? The Bureau of Labor Statistics doesn't use a big sample like that.

Miss ARNSTEIN. We have close to 300,000 inactive nurses, something like that.

Mr. LAIRD. Did you get a recommendation from Census or from BLS on what size the sample should be?

Miss ARNSTEIN. I don't know whether our statisticians actually talked to BLS, but they are constantly in touch with the sampling experts and they, themselves, are sampling experts.

Mr. LAIRD. That is a big sample, though.

Miss ARNSTEIN. Yes.

Mr. LAIRD. When you have 300,000, you are using almost 10 percent to take a sample.

Miss ARNSTEIN. Yes, that's true.

Mr. DENTON. Couldn't Census do that for you?

Miss ARNSTEIN. I don't think so. I don't think they would do as thorough a questionnaire as we are doing.

Mr. LAIRD. That is a big sample.

FELLOWSHIP, TRAINING AND RESEARCH GRANTS

Mr. DENTON. You have 16 that are administering the grants; that is right, is it not?

Mr. HAMBLETON. The largest amount is for traineeships.

Mr. DENTON. Who does that go to?

Miss ARNSTEIN. To the schools, to the universities.

Mr. DENTON. This $9,728,000 that you spent in 1963 was all grants to colleges and universities?

Miss ARNSTEIN. Yes, sir.

Mr. DENTON. Is there a breakdown of that anyplace in the justification?

Mr. HAMBLETON. Starting on page 259 the fellowships are listed. On page 260, the training including professional nurse traineeships, $7,612,000 is reflected.

Mr. KELLY. Mr. Denton, perhaps it would help if I identify the figure for you. If you move over to page 249 you will see the items: Research grants, $1.8 million; fellowship grants, $316,000; training grants, $7,612,000. Those three items now amount to $9,728,000, which is the amount reflected on the next page under "Grants, subsidies, and contributions," you see.

Mr. DENTON. The research, fellowship, and training are all to colleges?

Miss ARNSTEIN. Yes, sir.

Mr. DENTON. And that is reflected on what page?

Mr. HAMBLETON. It starts on pages 257, 259, and 260.

Mr. DENTON. And you want to increase that sum to $9,955,000, which is an increase of $227,000?

Miss ARNSTEIN. Yes, sir.

Mr. DENTON. And this makes up, very largely, the total increase that you asked for, $366,000?

Miss ARNSTEIN. Yes.

Mr. KELLY. That's all in research grants.

Mr. DENTON. That is, there is no increase in the fellowships, and there is no increase in training?

Mr. KELLY. That is correct.

Mr. DENTON. But the increase is $227,000 in research grants?

Mr. KELLY. Yes, sir.

Mr. DENTON. I think that is all.

TRANSFERS TO GSA

Mr. LESINSKI. Mr. Kelly, most of the appropriations show a transfer to public buildings services. What caused this transfer of funds?

Mr. KELLY. Two years ago, Mr. Lesinski, the executive branch and the Congress agreed on a revised procedure for the handling of all agencies with respect to rent and the provision of space, alterations and repairs, and new buildings. The first-year cost of rent in leased space was to be paid for by the agency that is obtaining the space. Every one of our appropriations that provide for additional staff, unless we know of space that is available in a federally owned building, provides for the cost of rental space the first year. Then, when the General Services Administration obtains space and provides it to us, we transfer the money.

In second and subsequent years it is the responsibility of the General Services Administration to provide for this rent in their budget. So it is not treated as just an expense; it is not treated as just a comparable transfer. It is an actual transfer of money to the General Services Administration and we are thereafter relieved of responsibility for accounting for it or for thereafter budgeting for it. By showing it out as a transfer, in this way it keeps from showing it as a decrease in the budget, because it is no longer in the base of the budget.

Mr. LESINSKI. Actually GSA has always handled all Federal buildings with the exception of the Post Office Department. Where the

Post Office is by itself, only one agency will handle a building, then of course the Post Office Department would pay for the rental.

Mr. Kelly. They have had a great deal of difficulty with the first year's rent of being able to adequately coordinate the total operation so as to take care of the expansions that occur in an agency. So this provision was made and it affects all agencies; all of them are doing this now.

SHORTAGE OF NURSES

Mr. Lesinski. Miss Arnstein, regardless of how much money you spend on nurses and nurse training, you will never have sufficient nurses unless the pay is proportionately increased; is that right?

Miss Arnstein. I think that is probably true.

Mr. Lesinski. So why all the "hullabaloo" about additional funds?

Miss Arnstein. Oh, we can advance a long way toward it.

Mr. Lesinski. Regardless of what program you have—be it engineers, doctors, nurses or what it may be—if the pay is not substantial for the effort they have to put out for the training and so forth, they will not stay in the job; is that correct?

Miss Arnstein. Yes, but we have 550,000 nurses now working, so that 550,000 of them are willing to work for whatever pay they are now getting.

We think that some of these 550,000 could give even better service than they are giving and that their service could be extended.

We have found in some of our studies that the nurse spends as much as a third of her time doing work that a clerk could do; that sometimes she spends 10 percent of her time doing messenger work. When the hospital administrator sees these results they have, in almost every instance, been willing to put on clerks or secretaries or messengers in order that the nurses can give more nursing care to the patients.

Mr. Lesinski. In other words, you find poor management of the hospitals, then?

Miss Arnstein. Often.

Mr. Lesinski. Well, what business is that of yours?

Miss Arnstein. Well, we think any way we can get more nursing service to patients is part of our business.

EFFECT OF INCREASE IN PAY AND NUMBERS OF NURSES ON HOSPITAL COSTS

Mr. Lesinski. Would it not be true that the increased pay to nurses, if it was advanced—you were talking about comparison with school teachers and so forth—would increase the cost of operation of your hospital?

Miss Arnstein. Yes, sir.

Mr. Lesinski. And with the Blue Cross requesting an increase in rates—we have had that trouble in Michigan. They are asking something like a 25-percent increase or whatever it may be. So, by improved——

Mr. Fogarty. You do not know how much it would be increased if nurses were paid what they deserve, do you?

Mr. Lesinski. Well Mr. Chairman, off the record——

Mr. Fogarty. No, we cannot mislead a witness like that. I mean we cannot put words in the witness' mouth.

Nobody in this room knows how this would increase the Blue Cross rates, or what the increase will be.

Mr. LESINSKI. No. Off the record.

(Discussion off the record.)

Mr. LESINSKI. I have no more questions, Mr. Chairman.

Mr. KELLY. Could I just comment on the statement. It does seem to me there should be some kind of an answer to Mr. Lesinski's statement. One, we are not, as I understand it, increasing the supply of nurses commensurate with the increase in population. Secondly, it doesn't cost any more to operate a hospital bed for additional people with additional nurses.

The great problem that is faced here is that, with respect to the whole medical manpower, we are continuing to produce the same amount of medical manpower but the population that needs to be served is increasing. Unless some steps are taken to bring about a change in that situation there will be an inability to provide adequate medical care.

Then, on the cost side, as Miss Arnstein said, much of their work is designed to try to get better utilization of professional skill which would permit you to pay professional people more money without it costing them more, because you would be using them for selective duties and using less qualified people for certain of the duties they are now performing.

Mr. LESINSKI. Are you saying that the fact you have more nurses in the hospital does not increase the cost per bed?

Mr. KELLY. What I am saying is as you build more hospitals and you have more patients to be served, you need more nurses to take care of them, and that the present system is not producing those nurses.

Mr. LESINSKI. Well, I will accept that. But in your original statement you said that it does not increase the cost of operating a bed in the hospital if you have more nurses. That is wrong.

Dr. CHRISTENSEN. I think the point Mr. Kelly was talking to, as I understand it, was that——

Mr. FOGARTY. Of course, in the first place, it is not the nurses that increase the hospital cost. The hospitals have been holding down everybody's salary that works in the hospital, from the baker right up.

Mr. LESINSKI. That is correct.

Mr. FOGARTY. It is that group of personnel that is finally being given some consideration. In the last 4 or 5 years it has had some effect on the increased costs in hospitalization, doctors' fees also have.

It is also true that you are in this business because the Congress expects you to be in it and also because every volunteer organization in this country, and practically every hospital, wants some help.

Mr. LAIRD. Would you not agree, Mr. Chairman, that if, through these studies, we get better utilization of the nursing talent we would likely see some decline in cost?

Mr. FOGARTY. I think Miss Arnstein has done a good job in the last few years in convincing this committee that what you say can be done, and many of these cooperative research programs have shown ways that you can relieve nurses of other duties and bring in other people to do nonprofessional tasks they are doing. We are doing the same thing in the teaching field today because of some of the cooperative research programs in the Office of Education.

Mr. LESINSKI. Now, Mr. Chairman——

Mr. FOGARTY. I think we can save money that way. If we did not have this kind of program, the costs in the hospitals would be higher than they are today.

Mr. LESINSKI. Mr. Chairman, your remarks are quite proper because of the fact that not paying nurses a sufficient wage is reason for the shortage.

If you do not pay a person the proper wage for the efforts exerted, he will not work at that skill. That is why I brought the question up. Not the fact you are not trying to do a good job, but actually you are backed against a wall; if you do not raise the salaries your effort is nil.

Mr. FOGARTY. Mr. Laird.

END-OF-YEAR EMPLOYMENT

Mr. LAIRD. In your budget you have 132 permanent positions, an increase of 7 over 1963. As I look down at the bottom of this chart I see the number of employees at the end of the year will be 139, with an average number of 127. The full-time equivalent of all other positions is one.

Now that 1 full-time equivalent, in order to get the 139 figure, must be 12 people all hired in the month of June?

Mr. HAMBLETON. It was a judgmental factor that there would be a large number of temporary people toward the end of the year in this particular case, which raised that to 139. In addition to the seven new permanent jobs, it would increase at the end of the year, another several.

Mr. LAIRD. I do not see how you come up with the number at the end of the year of 139. You surely don't limit hiring temporary personnel to just the month of June.

Mr. KELLY. I can't specify why, with only one equivalent man-year, it is 12.

But it is interesting to note in 1963 there were 12 more employees at the end of the year than the average number of employees and that, in 1964, it is predicted that there will be 12 more employees at the end of the year than the average number of employees. So that the 1964 estimate appears to be consistent with experience.

Mr. LAIRD. You are not going to annualize that, are you?

Mr. KELLY. No. You notice we only asked for 13 and 7 additional positions. It goes up by 13; that is, the average number of all employees goes up by 13. However, there was an increase in 1963. This is to account for the full year.

Mr. HAMBLETON. That is correct.

Mr. LAIRD. It is not too important, so let's skip over it.

Mr. KELLY. Let me give you a little note on it. It is true that it would appear if they all worked for the month of June that none could work at any other time during the year. This accounts for that equivalent one.

(The following explanation was submitted later:)

The end-of-year employment contemplated a meeting in June of the expert advisory committee of 12 members for 2 days.

PERSONNEL BENEFITS

Mr. LAIRD. What does this increase of $28,800 in personnel benefits include?

Mr. KELLY. It includes the Federal share and the employer's share of retirement, which is 6½ percent of the civil service amount. In addition, it includes where applicable, an amount paid for social security as well as the Federal share of the social security payment. It also includes the employer's share of the health insurance program and of the life insurance program.

Mr. LAIRD. Well, there must be something else in that figure because you would not show that big an increase for the things you mentioned——

Mr. HAMBLETON. This includes quarters allowance, too.

Mr. LAIRD. With a personnel increase of only seven positions.

Mr. KELLY. You must understand that throughout the entire budget it reflects the fact that in 1964, for substantial numbers of the classified grades, the second step of the salary increase goes into effect. Therefore, the personal service costs go up considerably more than just the number of positions.

Mr. LAIRD. That would affect the personnel compensation.

Mr. KELLY. And the employer's contribution to personnel benefits.

Mr. LAIRD. Well, there must be an increase in quarters allowance in this year.

Mr. HAMBLETON. There is an increase in quarters allowance.

Mr. LAIRD. Over last year?

Mr. HAMBLETON. That is correct.

Mr. LAIRD. That makes up the major portion of that?

Mr. HAMBLETON. That is correct.

TRAVEL

Mr. LAIRD. In the area of travel you have about a 30 percent increase. Why is that?

Miss ARNSTEIN. This includes travel for our conference—evaluation conference.

Mr. LAIRD. This is the conference that is going to report on January 1 of next year?

Miss ARNSTEIN. It convenes in July.

Mr. LAIRD. And you have for 6 months——

Miss ARNSTEIN. Oh, no.

Mr. LAIRD. I mean the report is due January 1?

Miss ARNSTEIN. That is correct.

Mr. HAMBLETON. $18,000 of that total is for the conference.

Mr. LAIRD. How much in total is tied in with the conference?

Mr. HAMBLETON. $23,000.

Mr. LAIRD. So the increase will be nonrecurring in the amount of $23,000 and will be dropped out of next year's budget?

Mr. HAMBLETON. That is correct, printing and travel.

STATISTICAL SAMPLING

Mr. LAIRD. I was interested in the comments that you made in answer to one of Mr. Denton's questions. Of the 300,000 nurses that are not working at nursing, the sample you were using was 30,000. Now it would seem to me this would be a very costly method of sampling.

Miss Arnstein. One of the reasons was because we wanted to get information by States; we didn't want just the national picture. We wanted the States to be able to use their information so they could put on programs afterwards.

This isn't for statistical purposes only. This is to result in an action program of refresher courses being offered them and in order to do that you have to have a larger sample.

Mr. Laird. But you really do not need more than a 1-percent sample, I would think.

Miss Arnstein. When you divide up the total number, Wyoming or Nevada, South Dakota, North Dakota, Montana would not have enough information to give them any picture of what their situation was like unless we did a larger sample than would be required for a national picture.

Mr. Laird. When BLS goes out on many of these studies, even when they calculate some of these things in an individual city, they would not think of using as much as a 1-percent sample. They have this worked out so they can go even much lower than that and get valid figures.

Now, to tabulate 30,000 questionnaires takes a lot of man-hours.

Miss Arnstein. Well, it certainly takes more man-hours than a fewer number. The questionnaires are precoded. We are not doing any major editing. They are put directly on the punchcards into the machines. So it is not a very costly operation, though naturally it is more costly than 10,000.

Mr. Laird. I was just using this as an example. I do not mean to be picking on the nurses services in particular. It just seems to me that the Department, in the whole area of statistical analysis, should be watching these things rather closely. When I hear that there is a 10-percent sample being used, it bothers me.

We heard the other day that the Office of Education, in order to find school classroom shortages, is using almost a 100-percent sampling procedure. It makes me wonder what kind of control there is over this whole sampling procedure in the Department of Health, Education, and Welfare.

Mr. Kelly. I think that it is a good question, Mr. Laird, and I think that it is a responsibility to see that we are using the best statistical techniques.

We do have a couple of professional statisticians in the Office of the Secretary under Assistant Secretary Cohen. And, as you know, when we operate a questionnaire, we have to get the approval of the Bureau of the Budget which has a statistical standards organization with professional statisticians.

In connection with educational statistics, they have worked with us both at the departmental level and at the Budget Bureau level to try to determine what items can be better handled with the use of statistical sampling. Although I am not a professional statistician or sampling statistician, I think I do know enough to be able to say to you that you must not be misled because one sample operates much lower than 1 percent and that all samples can do this. You have to construct——

Mr. LAIRD. No, I am not saying that. But when there is this terrific difference I think it deserves looking into rather carefully.

Mr. KELLY. So much of it depends on what you are trying to get at.

Mr. LAIRD. It seems to me a 10-percent sample, statistically, is very high.

Mr. KELLY. For some instances, a 10-percent sample may be considered much worse than a 1-percent sample. But you have to construct the sample for the particular number of variables that you are trying to collect data on, as well as the number of subdivisions of this data.

I had an illustration, some years ago, when we got the census people to come in to try and help us design a statistical sample in connection with the housing occupancy study of public housing. Their conclusion was that the most economical and effective way of gaining the data was a 100-percent analysis because the number of variables, on which we wanted information, was so great that the samples constructed for each of these variables ended up with a sample of more than 100 percent.

Mr. LAIRD. Now, the Social Security Administration has this contract with the Bureau of the Census to do a study for them. The statistical sample that is being used there has been worked out by the Bureau of the Census.

Mr. KELLY. Well, I think probably jointly by the Bureau of the Census and the Bureau of Old-Age and Survivors Insurance, which has some very competent——

Mr. LAIRD. Census has been asked to do this. They are being paid on a contract basis by the Social Security Administration.

Mr. KELLY. Yes, but I say the size of the sample, the construction of the sample, and data desired, are probably being worked on jointly. Social Security Administration has some very competent people who are sampling statisticians and uses them for a tremendous number of studies of their voluminous records. These studies are susceptible to all kinds of statistical analysis, but never a 100-percent sample.

Mr. LAIRD. Or even 10 percent. They never would use 10 percent in sampling a group of 300,000.

Miss ARNSTEIN. Could I say one more word?

Mr. LAIRD. I would love to hear you.

STUDY OF INACTIVE NURSES

Miss ARNSTEIN. I think I may have given you the wrong impression by the way I started, because this study is being done for information purposes. It is being done for an action program. The States want to be able to move right away, without doing another study after we are finished. They want to offer refresher courses in localities where there are nurses who say they want to go back to work.

Now, we think there is tremendous importance in this because we assisted in the analysis of refresher courses that the Chicago Council on Community Nursing had been putting on and they had given courses to 450 nurses, and 77 percent of them did actually work after this.

This surprised everybody, such a high percentage of the people who came in for a week or two of a course and took jobs, full-time jobs.

This, together with some other reports that weren't as well documented, made us feel that here was a source of supply that we were not tapping all over the country. So, while we are making the nationwide study, we are trying to make it large enough that these States will have sufficient information on hand as to where to hold their refresher courses.

Mr. Laird. Probably many of these women that are trained nurses have families. In order to get someone to come in and help out at their home, they find they have to pay almost as much as they receive as a nurse and this has been a deterrent toward many of these people going back into nursing.

That is all I have, Mr. Chairman.

Mr. Fogarty. Many people think mothers ought to stay home, anyway, especially if they have four or five children, do they not? There is a difference of opinion as to whether married women ought to work or not, when they have young children.

Miss Arnstein. But many of these are over 40 and their children are away to college.

Mr. Fogarty. Dr. Haldeman has a pretty good story to tell of how the Hill-Burton hospital construction program has brought some of these nurses out of retirement.

Miss Arnstein. We did that survey for them.

Mr. Laird. Of course, I might point out that the social security amendments of last year provide for Federal assistance in establishing day care centers. That seems to be going in the opposite direction from keeping mothers at home to take care of the children.

Mr. Fogarty. I say it is a controversial question. I have raised this question with the Women's Bureau, as you know, several times before.

Mr. Michel?

Mr. Michel. I have no questions, Mr. Chairman.

Mr. Fogarty. Is there anything else you would like to say, Miss Arnstein?

Miss Arnstein. No, thank you.

Mr. Fogarty. Dr. Haldeman.

We will now take up hospital construction.

Wednesday, March 6, 1963.

HOSPITAL CONSTRUCTION ACTIVITIES

WITNESSES

DR. JACK C. HALDEMAN, CHIEF, DIVISION OF HOSPITAL AND MEDICAL FACILITIES

DR. AARON W. CHRISTENSEN, DEPUTY CHIEF, BUREAU OF STATE SERVICES

WILLIAM B. BURLEIGH, SPECIAL ASSISTANT

JOHN W. HAMBLETON, FINANCIAL MANAGEMENT OFFICER FOR COMMUNITY HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	1,495	1,931	2,154
	Positions other than permanent	8	8	8
	Other personnel compensation	------	------	15
	Total personnel compensation	1,504	1,939	2,177
12	Personnel benefits	129	179	196
21	Travel and transportation of persons	167	180	194
22	Transportation of things	8	8	9
23	Rent, communications, and utilities	32	33	35
24	Printing and reproduction	44	50	59
25	Other services	77	71	80
	Services of other agencies	------	------	1
	Research contracts	126	50	115
	Payment to Bureau of State Services management fund	58	64	108
26	Supplies and materials	15	18	20
31	Equipment	16	19	15
33	Investments and loans	1,000	500	500
41	Grants, subsidies, and contributions	193,964	215,979	211,005
	Total obligations	197,140	219,090	214,514

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	220	243	243
Full-time equivalent of other positions	1	1	1
Average number of all employees	179	221	237
Number of employees at end of year	187	243	243
Average GS grade	9.1	9.3	9.3
Average GS salary	$8,077	$8,608	$8,608

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Construction of hospitals, etc., under pt. C of the Public Health Service Act	147,010	150,817	135,000
(*b*) Construction of medical facilities under pt. G of the act:			
(1) Chronic disease hospitals	6,857	14,881	20,000
(2) Diagnostic or treatment centers	8,258	16,581	20,000
(3) Rehabilitation facilities	9,817	7,220	10,000
(4) Nursing homes	15,330	23,380	20,000
Total construction grants	187,272	212,879	205,000
2. Hospital and medical facility research	7,962	4,191	7,228
3. Operations and technical services	1,770	2,020	2,286
Total program costs, funded [1]	197,004	219,090	214,514
Change in selected resources [2]	136		
Total obligations	197,140	219,090	214,514
Financing:			
Unobligated balance brought forward (−)	−124,515	−146,879	−154,000
Unobligated balance carried forward	146,879	154,000	119,000
Unobligated balance lapsing	1,997		
New obligational authority	221,500	226,211	179,514
New obligational authority:			
Appropriation	221,500	226,220	179,514
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (76 Stat. 728) (−)		−9	
Appropriation (adjusted)	221,500	226,211	179,514

[1] Includes capital outlay as follows: 1962, $16,000; 1963, $19,000; 1964, $15,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $21,000 (1962 adjustments, $8,000); 1962, $165,000; 1963, $165,000; 1964, $165,000.

GEORGE WASHINGTON UNIVERSITY HOSPITAL CONSTRUCTION

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities: Grants for construction (costs—obligations) (object class 41)			2,500
Financing: New obligational authority (appropriation)			2,500

GENERAL STATEMENT ON HOSPITAL CONSTRUCTION ACTIVITIES

Mr. FOGARTY. Go right ahead, Doctor.

Dr. HALDEMAN. Thank you.

If I could submit a statement for the record, I would like to make a brief oral statement.

Mr. FOGARTY. All right, that will be fine.

(The statement follows:)

Mr. Chairman and members of the committee, the purpose of the Hill-Burton program is to assist the States in providing adequate hospital and medical facility services to the people. The basic methods used in operation of the construction program have not changed. First, State agencies must develop a comprehensive plan designed to meet the hospital and medical facilities needs of the States; and, second, construction projects are approved in the order of priority and in accordance with other provisions of the State plans and legislative requirements. A program of research and demonstration studies is also administered as a means of developing new organizational patterns of providing hospital services and improving the operation, utilization, and design of health facilities. As an integral part of this research program, grants for the construction of experimental and demonstration units of health facilities are made for the purpose of evaluating the efficiency and economy of new and novel architectural functional layouts and designs.

1964 ESTIMATE

The total request for hospital and medical facilities construction, for the research, demonstration, and experimental construction programs, and for salaries and expenses is $179,514,000. This amount will provide $100 million for construction of hospitals and public health centers; $70 million for the construction of nursing homes, diagnostic and treatment centers, rehabilitation facilities, and chronic disease hospitals; $7,228,000 for research and demonstration studies and experimental construction; and $2,286,000 for salaries and expenses.

PROPOSED PROGRAM FOR 1964

Construction.—The $170 million requested for construction purposes will enable the States to start the construction of more than 600 health facility projects involving over 21,000 hospital and nursing home beds and 220 units for various types of outpatient care. This projection is based on the assumption that State agencies will program the construction of the different kinds of health facilities during 1964 along the same lines as construction was programed during 1960 and 1961.

Substantial progress has been made during the last 15 years in reducing the deficit of general hospital beds and facilities, particularly in rural areas. At the same time, however, State agencies report that many areas require additional general beds and facilities and that the demand of communities for Hill-Burton assistance for general hospital facilities is still acute. While a portion of this need and demand may be attributed to the annual population increase of 3 million persons and to keep pace with bed obsolescence, it seems quite clear that a deficit of general hospital services and beds still exists.

The same substantial progress, however, has not been made in the construction of other health facilities, such as long-term care, rehabilitation, and outpatient facilities. For this reason, the full amounts authorized to be appropriated for nursing homes, chronic disease hospitals, diagnostic or treatment centers, and rehabilitation facilities are included in this budget request. The approval of this request will continue the effort being made to bring long-term and outpatient care facilities into better balance with general hospitals.

Facilities and beds constructed under the Hill-Burton program.—As of January 31, 1963, more than $1.8 billion in Federal funds had been committed to 6,516 projects costing a total of more than $5.8 billion. Of these projects, 5,065 have been completed, are in operation, and are serving their communities; 1,156 are under construction, and the remaining 295 are in the preconstruction stages. Completion of these projects will add 276,267 hospital and nursing home beds, and will result in the construction, expansion, or remodeling of 1,827 public health facilities, diagnostic or treatment centers, and rehabilitation facilities.

Research.—The amount of $7,228,000 is requested for the expanded research program. A portion of these funds will be used for the construction of units in health facilities which are experimental in nature and hold promise of improving the functional layout or operational efficiency of such facilities and reducing the costs of construction, maintenance, or operation. However, the bulk of the funds will be used for continued research and experimental and demonstration studies relating to hospital services, facilities, and resources. These research activities are necessary to bring the physical plant, equipment, and organizational and operational aspects of our health facilities up to peak efficiency. We place great emphasis and a high priority on our research and demonstration program because we are convinced that these activities will eventually lead to dramatic improvements in hospital organization, operation, and design. For example, these funds have supported major studies regarding progressive patient care and the concept is rapidly being accepted as an improvement in hospital organization. While additional research remains to be done in the field of progressive patient care, it gives promise of improving the utilization of scarce professional skills and at the same time improving the quality of patient care.

Highlights of program progress and plans

As the number and complexity of health facilities increase, it becomes more and more apparent that the planning of health facilities should be given greater attention. As a first step in providing the leadership necessary to improve planning, five ad hoc committees, composed of outstanding hospital and health authorities, have been established for the purpose of developing general planning principles. The report of the Surgeon General's Ad Hoc Committee on Planning for Mental Health Facilities was published in January of 1961. The report of the Ad Hoc Committee on Areawide Planning for Hospitals and Related Facilities, which was jointly sponsored with the American Hospital Association, was published in July of 1961. The three ad hoc committees established to develop planning principles for long-term care facilities, rehabilitation facilities, and tuberculosis hospitals have now completed their work, and their reports will soon be published.

The reports of these committees represent milestones in the field of health facility planning. The committees reports, however, represent only the first step in updating planning principles. These general principles must be reduced to detailed operating procedures and guidelines if they are to be of maximum usefulness to States, area planning councils, and communities. Accordingly, we continue to give a high priority to this program as a means of making the greatest impact on the need for comprehensive and coordinated planning for all types of health facilities. In my opinion, this activity will have a profound impact on health facility planning and construction for many years, and represents a forward step in insuring that Federal funds as well as private funds are expanded only for those facilities which are needed and of the highest priority.

Operations and technical services

The amount of $2,286,000 is requested for salaries and expenses to administer the program. No additional positions are requested for 1964.

The new positions authorized by the appropriation for 1963 are being effectively used for three purposes. First, we have reinforced our regional staff so as to permit more adequate attention to the review of State plans and project applications and to provide increased consultation and technical assistance to States and communities. Second, we are giving increased attention and priority to the development of technical guide material for use by States and communities in improving the methodology for planning the need for, and coordination of, the various kinds of health facilities. And, third, additional guide materials relating to the design, construction, equipping, and operations of health facilities, which have contributed so heavily to the success of the program, are being issued and of equal importance, the existing guide materials are being updated to reflect recent advances.

George Washington University Hospital Construction

Statement by Chief, Division of Hospital and Medical Facilities, Public Health Service on "George Washington University Hospital Construction"

Mr. Chairman and members of the committee, Public Law 87–460 authorized the appropriation of a sum not to exceed $2,500,000 for planning and carrying out a project of construction for the expansion and improvement of the facilities of the George Washington University Hospital in the District of Columbia.

NEED FOR 1964 FUNDS

The present university hospital was built under the limitations of wartime construction and is quite inadequate by present-day standards. On many occasions, beds are not available for patients with emergency medical or surgical conditions and there is a daily waiting list of patients requiring hospitalization. Overcrowding of this facility and the improvised use of space seriously curtail its efficiency. The hospital must be expanded and remodeled to meet patient care demands and to enhance the teaching program of the university.

PROPOSED PROGRAM FOR 1964

The proposed expansion of the hospital includes an additional 100 beds, and provides for additional operating rooms, surgical facilities for ambulatory patients, anesthesia and recovery rooms, and space for X-ray and sterilizing equipment to serve the entire hospital. Extensive remodeling of existing facilities in service areas is also proposed to improve the laboratory, emergency department, and kitchen facilities which presently are much too small and lack good functional arrangement. The existing facility also needs to be air-conditioned. In short, the expansion and remodeling of this teaching hospital is urgently needed if it is to provide the kind of patient care and medical teaching program required in the area.

1964 ESTIMATE

The estimated cost of the proposed construction is $5,100,000. This is, in our opinion, a conservative estimate and actual costs as determined at the time bids are taken will probably run in excess of this amount. Public Law 87–460 provides that the grant of funds may not exceed 50 percent of the cost of constructing and equipping the expanded and remodeled portions of the hospital. Since the cost will exceed $5 million, the full amount authorized ($2,500,000) would be required.

Architectural drawings are now being prepared and university officials estimate that drawings could be completed and construction contracts awarded shortly after July 1, 1963.

Mr. Chairman, I shall be glad to answer any questions you may have about this program and the budget request.

BUDGET REQUEST

Dr. Haldeman. Mr. Chairman, members of the committee, the purpose of the Hill-Burton program is to assist the States in providing adequate hospital and other medical facility services for the people. Our request for 1964 is $179,514,000. This amount will provide $100 million for the construction of hospitals and public health centers; $70 million for the construction of long-term, ambulatory, and rehabilitation facilities; $7,228,000 for our research and demonstration study program and for experimental construction grants; and $2,286,000 for salaries and expenses.

The $170 million requested for construction purposes will enable the States to start the construction of more than 600 health facility projects, involving 21,000 hospital and nursing home beds and 220 units for outpatient care and rehabilitation.

PAST PROGRESS

Substantial progress has been made in the construction of general hospital beds and facilities, particularly in rural areas. The same progress has not been made, however, in the construction of long-term, ambulatory, and rehabilitation facilities. For this reason, the full amounts authorized to be appropriated for nursing homes, chronic disease hospitals, diagnostic or treatment centers, and rehabilitation facilities have been included in our request as a means of continuing our efforts to bring these facilities into better balance with general hospitals.

As of January 31, 1963, more than $1.8 billion had been committed to 6,516 projects costing a total of over $5.8 billion. Completion of these projects will add 276,267 bospital and hursing home beds, and will result in the construction, expansion, or remodeling of 1,827 public health, ambulatory care, and rehabilitation facilities.

RESEARCH AND DEMONSTRATION PROJECTS

The amount of $7,228,000 is requested for research and demonstration studies relating to health facility operation, utilization, and design, and for the construction of experimental units of health facilities.

Obviously, research and demonstrations are not the only answer to problems of more efficient organization, operation, and utilization of health facilities. At the same time, however, we believe that this activity should be given a high priority since it represents our best hope of putting a damper on the rising costs of hospital care.

SALARIES AND EXPENSES

Finally, a request is made for $2,286,000 for salaries and expenses to administer the program. No additional positions are requested for 1964.

The new positions authorized by the appropriation for 1963 are being effectively used for three purposes: First, we have reinforced our regional staff so as to permit more adequate attention to the review of State plans and project applications and to provide increased consultation and technical assistance to States and communities.

Second, we are giving increased attention and priority to the development of technical guide material for use by States and communities in areawide planning of health facilities.

And third, additional guide materials relating to the design, construction, equipping, and operation of health facilities, which have contributed so heavily to the success of the program, are being issued, and of equal importance, the existing guide materials are being updated to reflect recent advances.

Mr. Chairman, I will be glad to attempt to answer any questions you may have.

Mr. Fogarty. Thank you, Doctor.

BUDGET FOR GENERAL HOSPITALS

The appropriation for 1963 is $226,220,000, and the request for 1964 is $179,514,000, a reduction of $46,706,000. The major change is a reduction of $50 million for general hospitals. How much was the budget request last year?

Dr. Haldeman. Last year the administration requested $100 million for general hospitals, the same as this year.

Mr. Fogarty. And we raised it to $125 million and agreed on $150 million in conference. So we increased this budget $50 million last year.

Dr. Haldeman. That is correct.

Mr. Fogarty. The justifications say, "Substantial progress has been made in reducing the need." Well, the budget figures indicate to me that you are going to stop this progress now. That is my way of analyzing it.

What did you ask the Department for, for general hospitals?

Dr. Haldeman. We requested the total amount of $150 million, which is the total amount authorized to be appropriated.

Mr. Fogarty. What did the Department do?

Dr. Haldeman. The Department recommended the same amount to the Bureau of the Budget.

Mr. Fogarty. And the Bureau of the Budget cut it down?

Dr. Haldeman. That is correct.

Mr. Fogarty. That is what they did last year.

Dr. Haldeman. That is correct.

Mr. Fogarty. Congress decided differently.

SHIFT IN EMPHASIS

Dr. HALDEMAN. Yes. I would like to say, Mr. Chairman, that the reduction, I think, reflects a shift in emphasis in Federal assistance, and takes into consideration the——

Mr. FOGARTY. This is nothing new.

Dr. HALDEMAN. No. The administration has requested new authority in legislation which, over the period of the next 4 years, would substantially increase the amount of money that is going into health facility construction. In other words, yesterday we had hearings in the Senate on categorical grants for mental health and mental retardation. The President has indicated that later this year he will submit to Congress a request to do something about a modernization program.

Mr. FOGARTY. But this is not going to have much effect on the 1964 budget that we are talking about.

Dr. HALDEMAN. Well, there is included in the projections of estimates for 1964, a $60-million increase in health facility construction, which will be dependent on legislation which is being recommended.

Mr. FOGARTY. I understand that. We cannot do much about it until the legislation passes.

HOSPITAL BED SHORTAGE

How many additional beds are required each year because of the increase in population?

Dr. HALDEMAN. 13,100 beds were estimated as required for a a population increase.

Mr. FOGARTY. How many additional beds are required each year due to obsolescence?

Dr. HALDEMAN. We estimate a total of 12,600 beds a year due to obsolescence.

Mr. FOGARTY. Those two amount to 25,000?

Dr. HALDEMAN. 25,700.

Mr. FOGARTY. How many beds would be provided with the funds you are requesting for 1964?

Dr. HALDEMAN. We estimate that 11,700 beds would be provided with the $100 million requested under this appropriation, and that there will be 14,000 beds built outside the program, making a total that almost exactly approximates the amount needed for population increase and obsolescence. I hasten to add that it was a coincidence that these two figures added up to the same amount.

Mr. FOGARTY. Just the same?

Dr. HALDEMAN. That is correct, sir.

BACKLOG OF NEED

Mr. FOGARTY. All right, you have answered my next question, "How much does that leave to help on the backlog of what we need?" The answer is "None." What is the backlog of need?

Dr. HALDEMAN. According to Hill-Burton State plans, there is a need for approximately an additional 150,000 general hospital beds. However, 75,000 of these are needed to replace existing obsolete facilities.

Mr. FOGARTY. You are not making any headway on the backlog of needed beds under the projection based on this budget, are you?

Dr. HALDEMAN. That is correct. With the program, as projected for next year, we will be holding our own in terms of short-term beds but will be making, we feel, a significant impact on ambulatory and long-term facilities.

Mr. FOGARTY. In this area of general beds, where the needs are still so great, you are not going to make any dent in the backlog at all?

Dr. HALDEMAN. We did not attempt to.

Mr. FOGARTY. Now, the authorization is still $150 million, is it not?

Dr. HALDEMAN. That is correct.

Mr. FOGARTY. When does the Hill-Burton law expire?

Dr. HALDEMAN. Its authorization extends through June 30, 1964. We anticipate the administration will request its extension this year.

Mr. FOGARTY. So this is the last appropriation as far as the law is concerned unless it is extended?

Dr. HALDEMAN. Yes, that is correct, sir.

Mr. FOGARTY. Well, it is such a popular program, I do not think there is any question about this one being extended.

What did you say was the backlog of general hospital beds?

Dr. HALDEMAN. According to Hill-Burton State plans, there is a backlog of 155,011 beds. About 77,000 represent beds that the State agencies said are nonacceptable because they have either structural deficiencies or are fire hazards. That does not include additional hospital beds that are functionally obsolete.

Mr. FOGARTY. So we will be in bad shape unless Congress does something about this.

AMOUNT REQUIRED TO MATCH AVAILABLE STATE AND LOCAL FUNDS

Now, as usual, we put the table that you have prepared at our request in the hearing at this point.

(The table referred to follows:)

Summary of anticipated construction of hospitals and other medical facilities (under title VI of the Public Health Service Act), if there were no limitation on Federal assistance for fiscal years 1964 and 1965

State and program year	Number of projects			Beds or units added, by type of project									Estimated cost (thousands)					
				Part C					Part G				Total program		Part C		Part G	
	Total	Part C	Part G	General hospital	Mental hospital	Chronic hospital	TB hospital	Health center (units)	Diagnosis or treatment (units)	Chronic hospital	Rehabilitation facilities (units)	Nursing homes	Total cost	Federal share	Total cost	Federal share	Total cost	Federal share
Total	1,651	1,088	563	66,880	9,190	1,289	17	64	95	3,192	68	19,366	$2,342,724	$1,000,359	$1,971,926	$842,327	$370,798	$158,032
1964	1,053	695	358	45,462	5,396	1,004		33	63	2,327	44	12,867	1,583,259	575,452	1,348,530	478,047	234,729	97,405
1965	598	393	205	21,418	3,794	285	17	31	32	865	24	6.499	759,465	424.907	623.396	364,280	136,069	60,627
Alabama	47	31	16	1,256	350			7	1			451	28,947	16,760	23,496	13,126	5,451	3,634
1964	25	17	8	544	350			4				241	15,489	7,788	13,038	6,154	2,451	1,634
1965	22	14	8	712				3	1			210	13,458	8,972	10,458	6,972	3,000	2,000
Alaska	12	4	8	103	252				3		3	34	16,426	6,972	12,416	4,966	4,010	2,006
1964	6	2	4	103					2		1	14	7,026	2,952	5.616	2,246	1,410	706
1965	6	2	4		252				1		2	20	9,400	4,020	6,800	2,720	2,600	1,300
Arizona	18	16	2	1,437				3		42		25	31,730	15,865	30,550	15,275	1,180	590
1964	18	16	2	1,437				3		42		25	31,730	15,865	30,550	15,275	1,180	590
1965																		
Arkansas	47	24	23	670	500						4	690	21,139	11,581	15,070	7,535	6,069	4,046
1964	20	10	10	310	500						2	305	12,700	5,600	9,700	3,600	3,000	2,000
1965	27	14	13	360							2	385	8,439	5,981	5,370	3,935	3,069	2,046
California	23	19	4	1,688				1		42	1	36	48,139	15,919	45,333	14,984	2,806	935
1964	17	15	2	1,388							1	15	39,376	13,124	37,260	12,419	2,116	705
1965	6	4	2	300				1		42		21	8,763	2,795	8,073	2,565	690	230
Colorado	35	26	9	1,093	500			1	4		1	138	48,417	23,050	46,407	22,092	2,010	958
1964	35	26	9	1,093	500			1	4		1	138	48,417	11,525	46,407	11,046	2,010	479
1965														11,525		11,046		479

Source: State agency reports to the Public Health Service.

Summary of anticipated construction of hospitals and other medical facilities (under title VI of the Public Health Service Act), if there were no limitation on Federal assistance for fiscal years 1964 and 1965—Continued

State and program year	Number of projects			Beds or units added, by type of project									Estimated cost (thousands)					
				Part C					Part G				Total program		Part C		Part G	
	Total	Part C	Part G	General hospital	Mental hospital	Chronic hospital	TB hospital	Health center (units)	Diagnosis or treatment (units)	Chronic hospital	Rehabilitation facilities (units)	Nursing homes	Total cost	Federal share	Total cost	Federal share	Total cost	Federal share
Connecticut	9	4	5	88						100	1	160	10,909	3,676	6,039	2,052	4,870	1,624
1964	5	2	3								1	110	4,440	1,581	2,600	967	1,840	614
1965	4	2	2	88						100		50	6,469	2,095	3,439	1,085	3,030	1,010
Delaware	3	2	1		375					100			6,700	2,941	5,000	1,666	1,700	1,275
1964	1		1							100			1,700	1,275			1,700	1,275
1965	2	2			375								5,000	1,666	5,000	1,666		
District of Columbia	4		4			30			3		1		21,434	1,717	434	217	21,000	1,500
1964	3		3			30			2		1		6,434	1,217	434	217	6,000	1,000
1965	1		1						1				15,000	500			15,000	500
Florida	48	37	11	3,345					1	140	2	348	53,318	24,002	48,125	21,375	5,193	2,627
1964	48	37	11	3,345					1	140	2	348	53,318	16,305	48,125	14,088	5,193	2,217
1965														7,697		7,287		410
Georgia	52	41	11	2,053				8	1		1	522	55,171	23,172	44,138	17,655	11,033	5,517
1964	27	21	6	1,347				4			1	350	38,683	16,348	29,933	11,973	8,750	4,375
1965	25	20	5	706				4	1			172	16,488	6,824	14,205	5,682	2,283	1,142
Hawaii	22	14	8	197	134			3	5	30	2		13,413	6,705	10,213	5,105	3,200	1,600
1964	10	5	5	50	74			1	5				4,101	2,050	2,301	1,150	1,800	900
1965	12	9	3	147	60			2		30	2		9,312	4,655	7,912	3,955	1,400	700
Idaho	8	4	4	210								263	6,943	3,472	4,900	2,450	2,043	1,022
1964	3	2	1	130								25	3,215	1,638	3,100	1,550	115	58
1965	5	2	3	80								238	3,728	1,834	1,800	900	1,928	964

Illinois	38	23	15	2,052	1,480				2	110	1	620	115,395	51,136	106,173	46,461	9,222	4,675
1964	20	11	9	1,000	320				1	110	1	290	48,295	22,696	42,773	19,501	5,522	3,195
1965	18	12	6	1,052	1,160				1			330	67,100	28,440	63,400	26,960	3,700	1,480
Indiana	16	12	4	346					3		1		57,825	19,275	51,225	17,075	6,600	2,200
1964	15	11	4	266					3		1		55,450	18,483	48,850	16,283	6,600	2,200
1965	1	1		80									2,375	792	2,375	792		
Iowa	34	23	11	948	100							840	36,750	12,228	28,260	9,398	8,490	2,830
1964	22	15	7	683								400	24,990	8,308	20,910	6,948	4,080	1,360
1965	12	8	4	265	100							440	11,760	3,920	7,350	2,450	4,410	1,470
Kansas	22	14	8	280							2	379	45,800	26,000	39,000	21,450	6,800	4,550
1964	3	1	2									49	1,900	4,050	800	2,350	1,100	1,700
1965	19	13	6	280							2	330	43,900	21,950	38,200	19,100	5,700	2,850
Kentucky	34	26	8	934				1			3	165	27,800	15,296	21,050	11,275	6,750	4,021
1964	13	10	3	364							1	75	10,850	5,746	8,600	3,975	2,250	1,771
1965	21	16	5	570				1			2	90	16,950	9,550	12,450	7,300	4,500	2,250
Louisiana	44	31	13	2,865	1,600				3		2	435	86,080	43,000	79,480	39,700	6,600	3,300
1964	24	15	9	1,725	500				2		1	435	43,700	21,850	38,700	19,350	5,000	2.500
1965	20	16	4	1,140	1,100				1		1		42,380	21,150	40,780	20,350	1,600	800
Maine	25	15	10	622			17		2	180	1	100	24,962	9,958	17,270	7,057	7,692	2,901
1964	14	8	6	503					2	55	1	30	18,462	6,708	14,670	5,757	3,792	951
1965	11	7	4	119			17			125		70	6,500	3,250	2,600	1,300	3,900	1,950
Maryland	33	24	9	1,654	918			2	1	66	2	65	89,512	44,541	83,679	42,308	5,833	2,233
1964	31	23	8	1,654	918			1	1	66	2	40	89,182	23,658	83,469	22,185	5,713	1,473
1965	2	1	1					1				25	330	20,883	210	20,123	120	760
Massachusetts	49	36	13	1,607		350		1	8		2	138	69,900	29,971	57,650	25,071	12,250	4,900
1964	22	20	2	1,007		350			1			48	39,100	17,651	38,350	17,351	750	300
1965	27	16	11	600				1	7		2	90	30,800	12,320	19,300	7,720	11,500	4.600
Michigan	33	27	6	1,979	210	80				40		360	48,950	18,756	44,950	16,756	4,000	2,000
1964	19	16	3	840	210					40		140	22,550	8,741	20,550	7,741	2,000	1,000
1965	14	11	3	1,139		80						220	26,400	10,015	24,400	9,015	2,000	1,000

Source: State agency reports to the Public Health Service.

Summary of anticipated construction of hospitals and other medical facilities (under title VI of the Public Health Service Act), if there were no limitation on Federal assistance for fiscal years 1964 and 1965—Continued

State and program year	Number of projects			Beds or units added, by type of project									Estimated cost (thousands)					
				Part C					Part G				Total program		Part C		Part G	
	Total	Part C	Part G	General hospital	Mental hospital	Chronic hospital	TB hospital	Health center (units)	Diagnosis or treatment (units)	Chronic hospital	Rehabilitation facilities (units)	Nursing homes	Total cost	Federal share	Total cost	Federal share	Total cost	Federal share
Minnesota	102	21	81	2,224				1	3		3	3,820	95,657	36,277	61,570	21,391	34,087	14,886
1964	70	14	56	1,398				1	3		2	2,680	66,258	23,048	41,650	12,428	24,608	10,620
1965	32	7	25	826							1	1,140	29,399	13,229	19,920	8,963	9,479	4,266
Mississippi:																		
1964 [1]																		
1965 [1]																		
Missouri	41	26	15	574	475	455			2		2	1,395	41,646	22,273	29,246	15,573	12,400	6,700
1964	24	14	10	129	280	260			2		1	1,170	20,050	11,475	12,650	7,275	7,400	4,200
1965	17	12	5	445	195	195					1	225	21,596	10,798	16,596	8,298	5,000	2,500
Montana	13	9	4	396						50		52	10,082	3,934	9,010	3,564	1,072	370
1964	13	9	4	396						50		52	10,082	2,172	9,010	1,902	1,072	270
1965														1,762		1,662		100
Nebraska:																		
1964 [1]																		
1965 [1]																		
Nevada	10	6	4	77				1				100	4,950	2,186	3,800	1,611	1,150	575
1964	5	3	2					1				50	2,700	1,166	2,100	866	600	300
1965	5	3	2	77								50	2,250	1,020	1,700	745	550	275
New Hampshire	14	7	7	279					4		2	20	6,937	2,761	5,482	2,031	1,455	730
1964	6	3	3	20					2		1		2,040	1,043	1,210	608	830	435
1965	8	4	4	259					2		1	20	4,897	1,718	4,272	1,423	625	295

New Jersey	30	20	10	1,865	100			2	4		3	278	47,212	17,532	38,870	14,224	8,342	3,308
1964	26	17	9	1,594	100			1	4		3	113	38,278	14,405	32,676	12,056	5,602	2,349
1965	4	3	1	271				1				165	8,934	3,127	6,194	2,168	2,740	959
New Mexico	20	13	7	695	110	27		5	2	60	1	55	15,472	7,736	14,017	7,008	1,455	728
1964	9	6	3	460	110	27				40	1	40	8,172	4,086	7,292	3,646	880	440
1965	11	7	4	235				5	2	20		15	7,300	3,650	6,725	3,362	575	288
New York	87	66	21	8,172	260			1	1	266	1	798	313,201	107,300	288,171	98,957	25,030	8,343
1964	48	37	11	5,130	200				1	186		414	204,321	48,540	190,471	45,590	13,850	2,950
1965	39	29	10	3,042	60			1		80	1	384	108,880	58,760	97,700	53,367	11,180	5,393
North Carolina	46	38	8	3,075				1	3	125	1	50	75,205	45,559	69,385	42,338	5,820	3,221
1964	24	18	6	1,265				1	2	75	1	50	34,755	17,978	29,835	16,000	4,920	1,978
1965	22	20	2	1,810					1	50			40,450	27,581	39,550	26,338	900	1,243
North Dakota	7	3	4	93								322	7,273	3,262	4,458	1,944	2,815	1,318
1964	5	2	3	83								222	5,530	1,665	3,715	807	1,815	858
1965	2	1	1	10								100	1,743	1,597	743	1,137	1,000	460
Ohio	104	66	38	4,881	202			2	12		7	1,642	132,868	43,506	108,664	36,221	24,204	7,285
1964	58	34	24	2,690	112			1	8		4	1,135	81,803	26,815	64,959	21,653	16,844	5,162
1965	46	32	14	2,191	90			1	4		3	507	51,065	16,691	43,705	14,568	7,360	2,123
Oklahoma	22	19	3	834				1		70		36	17,869	8,934	16,869	8,434	1,000	500
1964	10	9	1	510						50			10,919	3,487	10,469	3,262	450	225
1965	12	10	2	324				1		20		36	6,950	5,447	6,400	5,172	550	275
Oregon	16	10	6	368							1	215	11,566	3,857	8,956	2,987	2,610	870
1964	10	7	3	268							1	85	8,356	2,787	6,856	2,287	1,500	500
1965	6	3	3	100								130	3,210	1,070	2,100	700	1,110	370
Pennsylvania	73	53	20	1,867	52				3	278	2	958	98,685	32,659	81,325	26,795	17,360	5,864
1964	44	34	10	1,535					2	60		818	71,352	23,537	61,638	20,228	9,714	3,309
1965	29	19	10	332	52				1	218	2	140	27,333	9,122	19,687	6,567	7,646	2,555
Rhode Island	7	3	4	179					3				13,881	9,723	5,068	5,088	8,813	4,635
1964	7	3	4	179					3				13,881	4,897	5,068	2,546	8,813	2,351
1965														4,826		2,542		2,284

[1] Not available.

Source: State agency reports to the Public Health Service.

Summary of anticipated construction of hospitals and other medical facilities (under title VI of the Public Health Service Act), if there were no limitation on Federal assistance for fiscal years 1964 and 1965—Continued

State and program year	Number of projects			Beds or units added, by type of project									Estimated cost (thousands)					
				Part C					Part G				Total program		Part C		Part G	
	Total	Part C	Part G	General hospital	Mental hospital	Chronic hospital	TB hospital	Health center (units)	Diagnosis or treatment (units)	Chronic hospital	Rehabilitation facilities (units)	Nursing homes	Total cost	Federal share	Total cost	Federal share	Total cost	Federal share
South Carolina	34	30	4	1,650	100			5	1	30		80	31,290	19,860	29,790	18,860	1,500	1,000
1964	13	13		770	100								15,990	9,660	15,990	9,660		
1965	21	17	4	880				5	1	30		80	15,300	10,200	13,800	9,200	1,500	1,000
South Dakota	23	9	14	203				1			4	330	6,560	4,996	2,970	3,069	3,590	1,927
1964	11	5	6	64				1			3	106	3,140	3,161	1,370	2,269	1,770	892
1965	12	4	8	139							1	224	3,420	1,835	1,600	800	1,820	1,035
Tennessee	9	4	5	262								220	5,057	3,812	3,815	2,784	1,242	1,028
1964	9	4	5	262								220	5,057	3,812	3,815	2,784	1,242	1,028
1965																		
Texas	66	49	17	2,801	680			4	4	770	1	300	77,634	34,649	58,309	25,737	19.325	8,912
1964	44	30	14	2,180	680			4	4	770	1	203	67,758	29,710	49,223	21,193	18,535	8,517
1965	22	19	3	621								97	9,876	4,939	9,086	4,544	790	395
Utah	30	25	5	1,180	200	80		4				250	50,350	22,720	48,200	21,645	2,150	1,075
1964	30	25	5	1,180	200	80		4				250	50,350	20,720	48,200	19,645	2,150	1,075
1965														2,000		2,000		
Vermont	16	7	9	368					7		1	100	10,062	3,288	6,770	1,928	3,292	1,360
1964	9	3	6	118					4		1	100	5,002	1,562	1,950	322	3,052	1,240
1965	7	4	3	250					3				5,060	1,726	4.820	1,606	240	120
Virginia	19	13	6	1,869						200		290	50,060	19,843	45,100	17,148	4,960	2,695
1964	19	13	6	1,869						200		290	50,060	11,540	45,100	10,000	4,960	1,540

1965														8,303		7,148		1,155
Washington	17	17		788									26,397	6,419	26,397	6,419		
1964	17	17		788									26,397	6,419	26,397	6,419		
1965																		
West Virginia	35	31	4	768	310	267		7	1		2	20	39,285	19,643	35,935	17,968	3,350	1,675
1964	21	18	3	478	10	257		3			2	20	29,305	14,653	26,455	13,228	2,850	1,425
1965	14	13	1	290	300	10		4	1				9,980	4,990	9,480	4,740	500	250
Wisconsin	98	46	52	3,450	282			2	7	493	7	1,681	130,615	51,531	96,101	37,726	34,514	13,805
1964	67	32	35	1,902	232			2	3	343	6	1,211	75,245	29,385	52,605	20,328	22,640	9,057
1965	31	14	17	1,548	50				4	150	1	470	55,370	22,146	43,496	17,398	11,874	4,748
Wyoming	12	5	7	197								235	4,595	1,733	2,785	893	1,810	840
1964	9	3	6	67								210	2,695	1,100	1,085	360	1,610	740
1965	3	2	1	130								25	1,900	633	1,700	533	200	100
Guam:																		
1964 [1]																		
1965 [1]																		
Puerto Rico	44	39	5	2,338					1			350	52,655	38,373	50,005	34,935	2,650	3,438
1964	44	39	5	2,338					1			350	52,655	21,500	50,005	18,559	2,650	2,941
1965														16,873		16,376		497
Virgin Islands:																		
1964 [1]																		
1965 [1]																		

[1] Not available.

Source: State agency reports to the Public Health Service.

Mr. FOGARTY. This table shows that we would have to appropriate $478,047,000 for general hospital construction in 1964, if we matched what the States are ready to spend in this part of the program. Is that right?

Dr. HALDEMAN. That is correct, sir.

Mr. FOGARTY. They say they are ready to put up almost $900 million.

Dr. HALDEMAN. That is correct.

Mr. FOGARTY. Now, is that based on applications or——

Dr. HALDEMAN. That is based on the States' knowledge of applicants who would be ready to start their projects during fiscal year 1964 if there were no limit on the amount of Federal funds that were available to them.

Mr. FOGARTY. And as far as 1965, which is a year and a half off, the States would be able to match an additional $364 million, if there was no ceiling?

Dr. HALDEMAN. That is correct.

Mr. FOGARTY. There are two or three States that do not have the figures available. One is Mississippi. What is the reason for that?

Dr. HALDEMAN. They apparently were not able to get their report in on time.

Mr. FOGARTY. Will you supply that for the record, and also Nebraska?

(The information follows:)

Summary of anticipated construction of hospitals and other medical facilities

State and program year	Number of projects			Beds or units added, by type of project									Estimated cost (thousands)					
				Part C					Part G				Total program		Part C		Part G	
	Total	Part C	Part G	General hospital	Mental hospital	Chronic hospital	TB hospital	Health center (units)	Diagnosis or treatments (units)	Chronic hospital	Rehabilitation facilities (units)	Nursing homes	Total cost	Federal share	Total cost	Federal share	Total cost	Federal share
Nebraska	11	9	2	505		320						85	13,020	5,088	12,270	4,788	750	300
1964	11	9	2	505		320						85	13,020	5,088	12,270	4,788	750	300
1965																		
Mississippi[1]																		

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[1] Anticipated construction figures were not compiled by the Mississippi Hill-Burton State agency.

Hospital Construction Research

Mr. Fogarty. What progress are you making in your research program? I see there is only $600,000 budgeted for experimental and demonstration construction grants during 1963.

Dr. Haldeman. We are increasing that substantially in 1964. We feel like we are making progress.

I would be glad to give you some examples, if you would like.

Mr. Fogarty. I wish you would.

Dr. Haldeman. I was interested, earlier, that there was some discussion about the rising cost of hospital care. A great deal of our research is addressing itself to this problem, which is very great.

COST REDUCTION THROUGH AREA PLANNING

We have, during the last few years, given 21 demonstration grants to local areawide planning agencies which, we feel, can play an important role in bringing about more effective planning and more effective utilization of our scarce construction dollar, particularly in urban areas. Such planning agencies are important since they carefully study the health facility needs of the area and then encourage needed hospital construction and discourage unneeded hospital construction.

I can give you an example of a grant we gave to the Rochester Regional Planning Council, Rochester, N.Y., which, incidentally, is chaired by Mr. Folsom, our former Secretary.

Mr. Fogarty. That is a real progressive group.

Dr. Haldeman. They have done an excellent job.

They did a study of hospital needs based on projecting existing utilization and projecting population increases, and came up with a figure of 500 needed hospital beds.

The total cost of these, plus needed modernization, was in the neighborhood of $35 million.

They knew in advance that they could probably raise only about $10 million and they were going to get about $3 million in Hill-Burton funds. So, at the request of the council, there was a study of the patients in the Rochester hospitals, a sample study, in which they came up with a figure of some 15 percent of hospital beds being occupied by patients that did not need to be in general hospital beds for medical reasons.

They instituted several programs. One, instead of building 500 new hospital beds, they plan to build 135. But they built 144 beds in 3 units connected with the general hospitals for long-term care. They were less expensive to construct and less expensive to staff.

At the request of the council a home care program was also organized which currently has about 100 patients on home care that would otherwise be in expensive hospital beds.

In addition to that, they got all the hospitals at Rochester to go together and build one laundry to handle all the linens of all the hospitals. They did a number of other things with the newer, more expensive equipment needed for some of the laboratory work.

They shared laboratory equipment with one hospital doing certain types of tests for the other hospitals.

We feel that this type of activity will help to put a damper on spiraling hospital costs.

Mr. FOGARTY. I have been up there a couple of times and I knew of this survey that had been carried on by Mr. Folsom and his group. But they are almost unique among communities of that size. They have people up there that have been interested in the progress of hospitals and all of these programs for some years, have they not?

Dr. HALDEMAN. That is correct.

Mr. FOGARTY. They have had that community interest. And also the Eastman-Kodak Co. has been a real asset to programs like this. And Mr. Folsom, the former Secretary of Health, Education, and Welfare, just his leadership has contributed a great deal to their success.

PHS PROGRAMS DESIGNED TO REDUCE HOSPITAL COSTS

Dr. Terry, before I forget it, I wish you would supply for the record just what the Public Health Service is doing in all of these areas that have helped to hold down hospital costs. I am referring to things like Dr. Haldeman mentioned in the Rochester survey: bringing together services such as the home care and nursing, training nurses for home care services, and getting people out of the hospitals sooner than they ordinarily would if they did not get this sort of service. There are several others that come under the Public Health Service that would make quite a story. If the Public Health Service had not taken the lead in many of these areas, the hospital costs would be much higher than they are at the present time.

Dr. TERRY. We will be glad to supply that, Mr. Chairman.

(The information follows:

PROGRAMS DESIGNED TO REDUCE HOSPITAL COSTS

DIVISION OF CHRONIC DISEASES

The Division of Chronic Diseases has responsibility for carrying out a nationwide program for improving, extending, and developing community out-of-hospital services for the chronically ill and aged as authorized by the Community Health Services and Facilities Act of 1961.

The program for 1963 consists of $6 million in project grants to National, State, and community health agencies for studies, experiments, and demonstrations for improving out-of-hospital services for the chronically ill and aged. The 1963 program also provides $13 million formula grants-in-aid to States and communities for the development, expansion, and improvement of out-of-hospital services such as home care, nursing homes, homemaker services, nursing care of the sick at home, and information and referral programs.

The total impact of this program is aimed at establishing and improving health services for people who can be cared for in other than a hospital setting.

With funds provided for such programs in fiscal years 1962 and 1963, the Division has supported the initiation and development of a number and variety of programs designed with the aim of reducing the cost of care to individuals and to the community without reduction in the quality of care, by making possible earlier discharge from hospitals, and by postponing or preventing need for hospitalization. Specifically, these developmental programs are—

(1) Sixteen programs providing medically prescribed nursing care of the sick at home (15 cooperative projects and 1 project grant) representing 15 States and at least 26 separate communities (1 statewide in character, 1 including 10 county areas, 12 embracing a county or metropolitan area, 2 specific locations).

(2) Fourteen homemaker, or variations such as nurse and health aids, projects (5 cooperative projects and 9 project grants) representing 12 States (2 statewide in character, 10 county or areawide, 2 specific locations).

(3) Twenty coordinated home care projects (10 cooperative projects and 10 project grants) representing 15 States, all serving county, hospital, or

other areawide jurisdictional units and 4 of which are hospital based. The essential feature of such projects is coordinated application of medical, nursing, and social services. These developmental projects range from the addition of services to an ongoing program to the demonstration of the concept in a new area. At least one of these programs, whose initial development has been supported by the Division, has qualified for acceptance under a prepaid insurance plan.

(4) Nine information and referral projects (six cooperative projects and three project grants) representing eight States (one statewide, five metropolitan area or countywide, and two delineated areas). The object of these projects is to coordinate a patient's medical needs with available services.

(5) Five programs designed to provide restorative services outside the hospital, either in the home or on an outpatient basis (three cooperative projects and two project grants) representing four States and the District of Columbia, including one statewide program and four county or areawide programs. These programs have been initiated under a variety of auspices—by State, district, county, or municipal health departments, and official health and welfare councils, and the like—and have drawn on the resources of every conceivable health and health-related organization in the community to achieve optimum economy in the use of scarce, highly specialized personnel. The intent has been not the proliferation of organizations, but the maximum use of available resources. They are designed to become self-sustaining following an initial developmental period.

(6) The entire nursing home program is geared to improvement of the quality of care given in nursing homes and similarly designated facilities, which will have an unquestionable effect on the use of these facilities as adequate alternatives to hospital care. The activities of this program include the improvement of administrative and management techniques, standardization of licensure requirements, provision of nursing and medical care supervision as needed, and cooperative arrangements with hospitals to promote full utilization of scarce talent, and knowledge in all areas of care and administration and the easy transfer of patients between the facilities as need dictates.

One of the basic purposes of public health is prevention of disease. Since the miracles of modern medicine have not yet provided us with a means of preventing many of the disease entities which are the responsibility of this Division, we have had to translate this purpose to one of prevention of the progression and disabling effects of the chronic diseases, through early case finding and prompt application of control and restorative measures. All our activities are geared to these basic purposes. To the extent that we are successful in this respect, there should, as a natural consequence, be a corresponding reduction in the need or length of hospitalization for these conditions.

DIVISION OF COMMUNITY HEALTH SERVICES

Inasmuch as the per diem cost of hospital care has increased from $16.17 in 1951 to $34.98 in 1961, it is unlikely that this trend will be interrupted. A number of activities are conducted by this Division having as a focus the encouragement of community programs which could result in retarding the rate of increase through stimulation of out-of-hospital care services. Among these activities are—

(1) *Grants for migrant health services*

These grants assist public and voluntary nonprofit agencies or institutions to pay part of the cost of establishing and operating family health service clinics and other special projects to improve health services for and the health conditions of domestic agricultural migratory workers and their families. The provision of such services often substitute for and prevent the need for in-hospital care.

(2) *Activities in health economics and medical care administration*

We anticipate that a number of direct studies conducted by members of our staff could contribute to retarding the rate of hospital cost increase and to development of out-of-hospital services. The same is true of consultation provided by our staff to other agencies, and contract studies which we are supporting. Thus, as an example, through our activities in health economics we are producing source books on the utilization, cost, and financing of health services (including trend data) for use of administrators, faculty of schools, and others. We will obtain and disseminate information regarding the costs and extent of services required for various types of illness as they relate to both in-hospital and out-of-hospital treatment. This information can assist community leaders in identifying illness and groups which could be treated at out-of-hospital rather than in-hospital facilities, and assist in formulation of programs for this purpose.

Another example of a specific project is an analysis and description of the organization and establishment of a comprehensive, prepaid group practice plan in a major community. The successful operation of such plans can contribute to a decrease in the need for in-hospital services by providing available and adequate preventive and ambulatory health care. Information concerning the experience of this community will be disseminated to other communities and official and voluntary health agencies.

Control of tuberculosis

1. Project grants and technical assistance to the States programs are designed to increase and improve the quantity of clinic and public health services. The result is that patients need not stay in hospitals as long because they can continue treatment in the community; contacts who have disease are diagnosed promptly so their hospitalization is shortened; and persons at risk can have prophylactic treatment so that they will not need hospital care.
2. Research on chemotherapy is aimed at finding the best regimens, and, therefore, reducing long hospitalization. Successful initial treatment reduces the danger of relapse and the need for retreatment, which is many times more expensive than initial treatment.
3. Research on chemoprophylaxis is being carried on so that treatment can be initiated before active disease occurs that would necessitate hospitalization.
4. Training for physicians in the most modern treatment methods and most rapid diagnostic techniques is carried on so as to reduce the severity of illness and, therefore, also reduce the time required in the hospital.
5. Consultation is provided to the States on economical ways of reducing the numbers of tuberculosis hospital beds in accordance with changing needs.

DIVISION OF NURSING

One of the most effective ways to increase productivity of nursing personnel, decrease costs of this personnel, and make possible better quality of patient care is to better utilize their time and skills.

In order to help hospitals increase and strengthen nursing services, the Division assists hospital personnel to conduct studies of the activities of the nursing staff. In general, the studies show that about a fourth to a third of the time of the nursing staff in the patient unit is spent on activities not requiring a nursing skill and that only a little over half the time provided for nursing is spent on patient care activities.

Of particular significance is what is learned about the actual use made of nursing skills and the ultimate effect on patient care. The results point out that one of the often neglected resources for nursing services is a better and wiser use of the available skills.

A study method,[1] developed by the Division of Nursing, based on the technique of work sampling is a way of analyzing the distribution of time spent by nursing service personnel assigned to inpatient units. The data provide a clear picture of the kinds of activities being performed by each category of personnel, a distribution of the time spent on these activities and the level of skill involved. Also, the data reveal the proportion of time nursing personnel are spending on activities not requiring nursing skill as well as the proportion of time provided for patient care that is spent on giving this care.

The analysis of data from studies shows marked similarities among hospitals in the distribution of time spent on activities and a common pattern in the activities being performed. The findings outlined in the following paragraphs refer to a particular hospital and are presented here in order to illustrate the results of trying to make better use of the skills at hand.

The original study was completed in 1956. Subsequent studies carried out in 1958, 1959, and 1961 became part of a continuing program of evaluation of nursing services. The findings of 1956 are compared with those of 1961 to show the effect of the changing pattern of operation on the use of skills. The data represent the distribution of the time of the staff on the nursing unit from 7 a.m. to 11 p.m. for 1 workweek.

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[1] U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Nursing Resources: "How To Study Nursing Activities in a Patient Unit." Public Health Service Publication No. 370, Washington, D.C.; Government Printing Office, 1954.

Time spent on nursing activities

Sixty-four percent of the time in 1956 and eighty-two percent in 1961 was spent on activities requiring nursing skill, both in the planning and the giving of patient care.

More time was being spent on nursing activities during the afternoon tour of duty than during the morning.

Information regarding the number of personnel assigned to the units showed that in 1961, with fewer nursing personnel, there was a fairly substantial increase in the amount of time spent on nursing activities.

Time spent on nonnursing activities

The time spent on nonnursing activities—clerical, housekeeping, dietary, and messenger services—by the nursing staff was markedly reduced, from 36 percent in 1956 to 18 percent in 1961.

Of the total amount of time spent on nonnursing activities, clerical continued to rank first and also showed an increase, dietary and housekeeping time decreased and messenger types of activities were eliminated.

The increase in clerical time was reflected only in the ward clerk category of personnel. Again, staffing data pointed out that although fewer hours of clerk time were being provided, especially on the afternoon shift, more time was spent on clerical work by the clerk. In other words, a more efficient use of clerks.

Time spent on activities and categories of personnel

By 1961 each of the categories of personnel were found to be spending larger amounts of time on activities at own skill level: head nurse time on head nursing increased from 60 to 97 percent, and the general staff nurse, practical nurse, and aid time spent on nursing went from 70 to 90 percent.

Although each of the categories continued to perform activities requiring several kinds of skills there was a greater concentration of time on fewer types of activities in 1961 than in 1956. When involved in activities other than nursing, the professional nurses tended to do the clerical and the subprofessional groups the dietary and housekeeping.

Time spent on patient care

In 1956, 3.5 hours of nursing personnel time was being employed per patient and in 1961 the numbers of hours was 2.5. Of these hours 55 percent of the time in 1956 and 71 percent in 1961 was being spent on patient care activities. In addition the data revealed that not only was this gap being narrowed but that patients were receiving more professional nursing care.

Studies of nursing activities can point the way toward a better utilization of personnel through reassignment and realinement of duties to reduce the number of nonnursing tasks now being performed by professional nurses. Through the application of the findings in the situation just described the changes have resulted in a better use of the available skills. At the same time the study underscored the difference between what is and what was intended, the ultimate effect of the reallocation and realinement of services on operating costs, on the nursing shortage, and even more importantly, on the patient and his care.

DIVISION OF HOSPITAL AND MEDICAL FACILITIES

The Division of Hospital and Medical Facilities (Hill-Burton program) reports the following projects and activities—completed or underway—which are designed to reduce the cost of hospital care:

1. Twenty-one areawide planning demonstration projects have been approved which are designed to stimulate the activation and operation of local, area, and regional planning groups. These areawide planning bodies will, among other activities, establish the need for additional health facilities and services within the geographical area involved, establish priorities for the allocation of construction funds, approve or disapprove fundraising drives, and otherwise encourage the construction of health facilities and discourage the construction of those which are unnecessary.
2. A study of prepaid medical care and hospital utilization showed that persons with comprehensive hospital and medical care insurance use hospitals less than persons whose coverage includes hospital care only. This study points to the need for developing methods of payment which encourage the use of less costly facilities suitable to the needs of a given illness, such as outpatient departments in hospitals and long-term care facilities.

3. A project is underway which is designed to identify those hospital activities which lend themselves to ready application of electronic procedures and other automated processes. Continued study in this area is necessary since it appears that many of the diverse activities involved in hospital operation, which can be categorized as administration, should lend themselves to laborsaving procedures in the same way as they are employed in nonhospital industries.

4. The efficiency and economy of some hospital services, such as meals, infant formulas, and laundry services, being purchased through contract, rather than through services operated by the hospital itself, are also being explored.

5. Another study was made of complications arising when obstetrical patients were discharged at the end of 48 hours and those discharged at the end of 5 or 6 days. This study concluded that there was no increase in complications in mother or child when such patients are discharged at the end of 48 hours.

6. Several studies are underway pertaining to the problems of recruiting, selecting, training, and retaining of hospital employees. The increasing demand for such people and the increasing competition for their services in nonhospital industries create a large and expensive turnover in personnel which decreases the efficiency and increases the cost of hospital operation.

7. Several demonstration projects are underway which are directed to methods of training paramedical personnel, such as food service employees, X-ray technicians, and laboratory technicians, on a regional or statewide basis. Individual hospitals are not staffed to carry out such a program, even though such an effort increases the morale and efficiency of such employees, and contributes significantly to efficient and economical operation.

8. Another study relates to the operation of some 60 "satellite" hospitals in suburban and rural areas through the development of formal working relationships with a large urban hospital. Joint purchasing, professional and specialized personnel of the large urban hospital working with their counterparts in the rural and suburban "satellite" hospital, and specialists in the urban hospital making routine and regular visits to the "satellite" facilities are a few of the advantages of such a relationship which not only contribute to economical operation but at the same time improve the quality of care.

One of the principal activities of the Division of Hospital and Medical Facilities is that of developing architectural design and equipment guide material which can be used by communities in developing efficient and economical facilities. The functional layout of the facility and the equipment used therein are significant factors in reducing the need for personnel and otherwise accomplishing economies in hospital maintenance and operation.

ROCHESTER SURVEY

Mr. Fogarty. I think this Rochester survey has been a worthwhile survey. I asked for it to be sent to me and I took the time to read it. I thought it was one of the best that I had seen.

Dr. Haldeman. I think it was very good. We actually worked with them in setting up the design.

Mr. Fogerty. I know you did.

Dr. Haldeman. Yes, Rochester, I think, has done an outstanding job. However, there are other areawide planning agencies that have likewise, I think, done a very good job. Columbus, Ohio, has had one in operation now for almost 15 years. They have been responsible in Columbus for advising donors in that community in the distribution of some $70 million hospital funds in that area since the war. Columbus is one community where general hospital planning is modern and now they are moving into other areas.

STATEWIDE PLANNING AGENCY

Mr. Fogarty. Couldn't this be carried out on a statewide basis in such a State as Rhode Island?

Dr. Haldeman. We have given a grant to start such an activity in the State of Kansas. In Kansas there were a number of very small rural hospitals being built, not with Hill-Burton aid, but there was a real feeling that they were needed on a statewide basis. Even in a State as large as Kansas, there must be a volunteer group that has the support of the top leadership to assist in better planning of hospitals. This group should go in and assist the Hill-Burton agency, which is somewhat limited in an area where only a part of the hospitals are being built by Hill-Burton aid.

STATES INTERESTED IN AREAWIDE PLANNING

The State of Maine has been down to talk to us about areawide planning. We have given a grant to Indiana for this purpose.

As I said, in the last 2 years we have given 21 such grants. A number of these, however, are what we call "seed" grants to an organization to get an areawide planning agency established within the area. We did that here in Washington, D.C., and now Washington has an areawide planning agency. Later on in the morning, I will be talking about the special grant to George Washington. Congress, in the last few years, has had special legislation relating to Washington hospitals. It has been very hard to evaluate.

We were asked our opinion by the Bureau of the Budget, but, in the absence of a good planning agency in the area, we have been in a difficult position as to how to advise on the special bills that do come before Congress almost every year for the District of Columbia.

Mr. Fogarty. The last authorization bill was sponsored by the present Speaker of the House, Mr. McCormack.

Dr. Haldeman. The George Washington University Hospital was.

Mr. Fogarty. All right, go ahead.

HOSPITAL UTILIZATION

Dr. Haldeman. We have other studies that I think have an impact on costs. We are interested in getting more information on the factors that influence hospital utilization. We have had two national conferences in the last year. The first one brought together people who are currently studying hospital utilization and its impact on cost to exchange experiences. About 2 months ago the American Hospital Association and the Public Health Service jointly sponsored another conference in which we invited the university groups not now engaged in this type of research to attend the meeting in which this subject was thoroughly investigated in the hope that we would get more research undertaken in the area.

We are doing a number of studies in automation and work simplification. We are doing several studies that involve studying the duplication of services and need for the best way to secure better coordination of services.

One study I would like to mention in more detail is one that was done by the American College of Obstetrics and Gynecology. They took a group of mothers who were in the hospital only 2 days after the post partum and compared them with another group that had a 5- or 6-day stay. The comparison was from the viewpoint of the frequency of complications. Their conclusion was that the group that stayed the shorter length of time had no greater incidence of complications, either to the mother or child, than the group that stayed longer. This obviously has an impact on hospital costs, because, if adopted on a more widespread basis, it would reduce the number of hospital days and the hospital costs in general.

One area we are just beginning to study is various aspects of hospital personnel administration. Two and a half percent of the employed people in this country, or over 1,700,000, are employed in hospitals. One of the biggest factors in hospital costs, mentioned earlier, is salaries, which make up about 70 percent of the hospital operating budget. Also, hospitals have a tremendous turnover, particularly in the lower paid categories.

My own feeling is that it doesn't necessarily mean that there would be a substantial increase in the cost if salaries were somewhat increased, because the tremendous turnover in hospitals is an extremely costly factor. I think that summarizes some of the main things.

Mr. Fogarty. Well, you have done very well.

CIRCULAR HOSPITALS

What about the question of circular hospitals, Doctor? Have you given up on that or are you still working on it? I know some other people have not given up on it.

Dr. Haldeman. Well, Mr. Chairman, we did approve an application last March, a month after this committee met, for Rochester Memorial Hospital to evaluate the advantages and disadvantages of the circular nursing unit as compared to single- or double-corridor nursing units.

Mr. Fogarty. You are talking about Rochester——

Dr. Haldeman. Memorial Hospital.

Mr. Fogarty. Well, this committee was impressed with some of the testimony that was given by these groups 2 or 3 years ago. In Rhode Island they built a State institution for the mentally retarded that used this type of circular design.

Dr. Haldeman. I am not familiar with that.

Mr. Fogarty. Have you seen it?

Dr. Haldeman. No, I have not.

Mr. Fogarty. It has only been in operation about a year and a half. I was wondering what you thought of it, if you were acquainted.

Dr. Haldeman. I am not familiar with that particular hospital. I did visit a hospital in Van Nuys, Calif., within the last year, that had a circular nursing unit and they were quite satisfied with it. They were not doing any careful evaluation of it such as we would like to see.

Mr. Fogarty. As I remember the testimony of these doctors from Minnesota, they said at the time that most of these circular hospitals that had been built were not along their specifications.

Dr. Haldeman. No, sir; the design in Rochester, Minn., I think, is a substantially improved design over the other ones that I have seen.

SALARIES AND EXPENSES

Mr. FOGARTY. How much of the Pay Act costs did you absorb?

Dr. HALDEMAN. We absorbed the total pay act increases in 1963.

Mr. FOGARTY. The justification says, "The program increase of $88,070 is requested to reduce the presently very high lapse rate for existing positions to a more realistic level." What does that mean?

Dr. HALDEMAN. We have not been able to staff up to our strength because of our lapse rate.

Mr. FOGARTY. The increase that you are asking for would just about take care of the lapse rate; would it not?

Mr. HAMBLETON. It would reduce it.

Mr. FOGARTY. Mr. Denton.

EVANSVILLE HOSPITAL

Mr. DENTON. You spoke about circular hospitals. I live in Evansville, Ind. Are you familiar with St. Mary's Hospital there, which is a Hill-Burton hospital?

Dr. HALDEMAN. I am not, sir.

Mr. DENTON. They have a circular hospital that has been there for some time. The office is in the central part and the rooms run out like spokes of a wheel. I think they made some studies for you on management and operations of hospitals.

Dr. HALDEMAN. Could I have the name of the hospital?

Mr. DENTON. St. Mary's in Evansville.

Dr. HALDEMAN. Oh, yes. They had a grant from us. I have forgotten what that study was at this time. It was the evaluation of the circular nursing unit. I believe it was in personnel.

Mr. DENTON. I thought it was management of hospitals.

Dr. HALDEMAN. I think it was. It was related to utilization—more effective utilization of personnel.

Mr. DENTON. That is a very beautiful building. I know the hospital.

BUREAU OF BUDGET REDUCTION

Now, I always thought this was a very fine program, and I am disappointed that they made such a heavy cut in it. Did the Bureau of the Budget give any reason why they cut it $52 million?

Mr. KELLY. I think for some period of time it was the feeling of the Bureau of the Budget that we have made very substantial progress in the development of the beds for the general hospital purposes, and that the Federal direction should be in the field of long-term care and not short-term care.

Mr. DENTON. Do you have any figures about how long a waiting list you have on general hospitals?

Dr. HALDEMAN. The best data that we have is the data referred to earlier that Mr. Fogarty requested, relating to the backlog of projects in the "general hospital" category which the States indicate would be ready to go within the next 2 years.

Mr. DENTON. What was that figure? I had it once before.

Dr. HALDEMAN. It would require a total in the "general hospital" category of $842,327,000 to provide the Federal funds for the projects which the States have indicated they would be ready to start in the 2-year period.

Mr. DENTON. Would the Bureau of the Budget have that figure?

Mr. KELLY. Yes, sir.

Mr. DENTON. They still thought we ought to curtail our activities of hospitals under the Hill-Burton Act.

Mr. KELLY. Yes. Their feeling is that the lesser level of general hospital construction is adequate to stay abreast of the requirements while we endeavor to emphasize long-term-care facilities.

Dr. HALDEMAN. As Mr. Fogarty indicated to this committee, until Congress acts on pending legislation, we can't do anything. But I think the President's program in the health facility field this year, if enacted, will over the next few years provide a program level substantially higher than now exists. We have been entering an era where we have to do more for our mentally ill and mentally retarded. We must reevaluate our whole approach to the problems of the mentally ill. It ranges from care in the larger institutions to care in community mental health centers and we have very few of these community mental health centers that are rendering the kind of comprehensive service we should be providing. Although I personally am very sorry that we cut back $50 million in the program this year, I do feel we are moving in the direction that will give us a better balance among hospital facilities.

ACCELERATED PUBLIC WORKS

Mr. DENTON. You were cut back $47 million from last year. However, you were granted $42 million under the accelerated public works program which had been expended, I believe.

Dr. HALDEMAN. We have been given about $42 million and I think an additional $2 or $3 million will be available. Of course we will get an additional amount, if Congress appropriates the remaining $500 million that is authorized under the accelerated public works program.

Mr. DENTON. I think that is why they cut you back. Do you think that is why they cut you back—because you got that accelerated public works money?

Dr. HALDEMAN. I don't think so.

Mr. DENTON. How much do you expect if the $500 million is appropriated?

Dr. HALDEMAN. If the same proportion were given to us, and I have every reason to believe that at least that amount will be given to us, we will receive an additional $50 million.

Mr. DENTON. How many hospitals are on the waiting list under that accelerated public works program?

Dr. HALDEMAN. We have 264 projects that have been submitted by the States that are approved and would involve $127 million of accelerated public works funds and would come to a total cost of $259 million.

Mr. DENTON. Now you have already expended about $40 million and you have $127 million more of approved projects?

Dr. HALDEMAN. That's correct, sir.

Mr. DENTON. You get in round numbers $50 million more if the $500 million is approved by Congress, so that would still leave a shortage of $67 million of the Government's share of these hospitals.

Dr. HALDEMAN. Yes—of applications submitted under the public works program.

Mr. FOGARTY. Mr. Lesinski.

NURSING HOME NEEDS

Mr. LESINSKI. Doctor, I was comparing Michigan and Minnesota. Just as a point of information, for 1964, nursing homes, there were 140 requested in Michigan and 2,680 in Minnesota. May I ask why Minnesota has more than Michigan? Has Michigan got plenty of nursing homes already?

Dr. HALDEMAN. There is a rather unusual situation in Michigan. I am familiar with that—I should change that. I am familiar with the Minnesota situation. I am not familiar with the Michigan situation. There has been a tremendous interest in Minnesota in getting an increased number of nursing home beds. There the pattern in nursing home beds is quite different than in most States. Whereas 70 percent of the beds in the country as a whole are proprietary nursing homes, the proportion in Minnesota is almost the reverse. I think that partially is due to the very active church groups, particularly the Lutherans. In Minnesota they have a tremendous backlog of need or of applicants for nursing home beds in that State. I don't know the situation in Michigan.

I should say there is a tremendous variation among States in the backlog of demand for nursing home beds. There is a tremendous variation between the number of beds in States with the most nursing home beds and those with the least. In the five States with the most nursing home beds per thousand aged individuals, there are over seven times the number of beds per thousand aged population than in the five States with the lowest number. This can't be explained—why there is this variation. I used to say that if we would build more nursing home beds we could build less general hospital beds. Well, that is only partially true, I find. We did a study of States to determine their utilization of general hospital beds and their utilization of nursing home beds. We found that the States with the highest number of general hospital beds, by and large, were the States with the highest number of long-term beds. In other words, those States with this situation were, generally speaking, better off economically, and they utilized both long- and short-term beds more fully than did the States with the lower economic status.

Mr. LESINSKI. Thank you.

Mr. FOGARTY. Mr. Michel.

Mr. MICHEL. No questions.

GEORGE WASHINGTON UNIVERSITY HOSPITAL CONSTRUCTION

Mr. FOGARTY. Doctor, regarding the George Washington University Hospital construction program, we have placed your statement in the record.

The request is for $2.5 million and this is, I understand, to carry out Public Law 87–460.

Dr. HALDEMAN. That's correct.

Mr. FOGARTY. Will you place a copy of the law in the record?

Dr. HALDEMAN. We will.

(The public law referred to is as follows:)

PUBLIC LAW 87-460

87TH CONGRESS, H.R. 8916

MAY 31, 1962

AN ACT To authorize grants for planning and carrying out a project of construction for the expansion and improvement of the facilities of George Washington University Hospital in the District of Columbia

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there are hereby authorized to be appropriated from time to time such sums, not exceeding $2,500,000 in the aggregate, as may be necessary to enable the Surgeon General of the Public Health Service (hereafter in this Act referred to as the Surgeon General) to make a grant or grants in order to assist the George Washington University in defraying the cost of planning and carrying out a project of construction to expand and improve the facilities of George Washington University Hospital in the District of Columbia. Sums appropriated pursuant to this section shall remain available for such purpose until expended.

SEC. 2. Grants made pursuant to this Act shall not exceed, in the aggregate, an amount found by the Surgeon General to be equal to 50 per centum of the cost of construction of the project covered by an application of the university submitted to the Surgeon General and approved by him pursuant to section 3.

SEC. 3. (a) The Surgeon General is authorized to approve the application of the university if—

(1) the application is in such form as may be prescribed by him and contains or is supported by such information as he deems necessary in order to carry out his functions under this Act;

(2) he finds that—

(A) the program of construction covered by the application provides for the facilities and services necessary (i) to provide adequate care for the patients expected to be served by the hospital and (ii) to constitute the hospital an adequate teaching hospital for the university's school of medicine;

(B) such program does not appear incompatible with any comprehensive plan for health facilities for the metropolitan area of Washington that has been or is likely to be developed by a body found by the Surgeon General to be a responsible areawide planning group; and

(C) the plans and specifications for the project meet the minimum standards of construction and equipment prescribed for hospitals by regulation pursuant to section 622(e) of the Public Health Service Act, as amended (42 U.S.C. 291e); and

(3) he finds that the application contains or is supported by satisfactory assurances—

(A) that adequate funds will be available for payment of the non-Federal share of the cost of construction of the project, and that adequate financial support for the maintenance and operation of the project when completed will be available;

(B) that the construction contract for the project will be awarded in accordance with such requirements, including requirements as to competitive bidding, as the Surgeon General may prescribe, and will contain such provisions for performance and other bonds and undertakings to be furnished by the contractor as the Surgeon General deems necessary;

(C) that the construction contract will provide that the Surgeon General and his representatives will at all times have access to the work in preparation or progress and that the contractor will provide proper facilities for such access and for inspection of the work;

(D) that the university shall keep such records as the Surgeon General shall prescribe, including records which fully disclose the amount and the disposition by it of the proceeds of assistance received under this Act, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount and nature of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

The Surgeon General and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examination to any books, documents, papers, and records of the university that are pertinent to assistance received under this Act.

(E) that the university will provide and maintain competent and adequate architectural or engineering supervision and inspection of the project to insure that the completed work conforms with the approved plans and specifications;

(F) that the labor standards set forth in section 5 will be observed; and

(G) such other assurances as the Surgeon General finds necessary in order to carry out the purposes of this Act.

(b) Amendment of an approved application shall be subject to approval in the same manner as an original application.

(c) After approval of the application, the Surgeon General shall pay the Federal share of the cost of construction (as determined under section 2) at such time or times, in advance or by way of reimbursement, and in such installments and subject to such reasonable conditions (with respect to performance of work, purchase of materials, and other matters), as he may deem appropriate in order to safeguard the Federal interest and assure completion of the work in accordance with the approved plans and specifications.

(d) Funds paid under this section for construction shall be used solely for carrying out the project as approved by the Surgeon General, including any amendment approved by him.

Sec. 4. (a) For the purposes of this Act the terms "construction" and "cost of construction" shall have the meanings assigned to such terms in section 631 of the Public Health Service Act, as amended (42 U.S.C. 291i), and regulations issued pursuant thereto, and shall include architect's and consultant's fees incurred in the planning of the project prior to enactment of this Act.

(b) For the purpose of administering this Act, the Surgeon General may delegate to any officer or employee of the Department of Health, Education, and Welfare any of his functions or powers under this Act except the issuance of regulations.

Sec. 5. All laborers and mechanics employed by contractors or subcontractors in the performance of construction work financed in whole or in part under this Act shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a—276a-5), and every such employee shall receive compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any workday or forty hours in the workweek, as the case may be. The Secretary of Labor shall have with respect to the labor standards specified in this section the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (15 F.R. 3176; 5 U.S.C. 133z-15) and section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c).

Sec. 6. (a) There are hereby authorized to be appropriated, for each fiscal year, such sums as may be necessary for administrative expenses incurred in carrying out this Act.

(b) Nothing in this Act shall be construed as limiting or superseding any authority of the Surgeon General or the Secretary of Health, Education, and Welfare under title VI of the Public Health Service Act or any other law.

Approved May 31, 1962.

Mr. Fogarty. Is there anything else you want to say about it?

Dr. Haldeman. No, except to say that this is construction which is very badly needed to bring the facility up to a reasonable functional arrangement. They are very short of beds.

Mr. Fogarty. The Speaker of the House, Mr. McCormack is very much interested in this particular project, as I know he has been over the years in medical facilities in the District of Columbia. He has been very active in the interest of all the hospitals in the District.

Dr. Haldeman. The officials of George Washington University Hospital tell me that they expect to let contracts in August or September.

HOSPITAL BED SHORTAGE

Mr. Fogarty. When we were talking about the shortage of general hospitals and general hospital beds you said it is 150,000, did you not?

Dr. Haldeman. Correct.

Mr. Fogarty. If we go back about 10 years, March 27, 1953, Dr. Cronin was then here and Mr. Busby said at that time:

> In the paragraph at the top of page 5 of your prepared statement, you say, "Even when one takes into consideration the existence of about 117,000 Federal hospital beds serving the civilian population such as those administered by the Veterans' Administration, the Indian Service, and the Public Health Service our national bed deficiency still remains 733,000."

In recent years we tend to stay with just the general hospitals in talking of the backlog. Why is that?

Dr. Haldeman. It is very difficult to determine that deficiency taking into consideration the need for beds in the mental health field and beds in the nursing home field.

Mr. Fogarty. You used to have this figure every year. Have you dropped this?

Dr. Haldeman. We have the data.

Mr. Fogarty. What is it now?

Dr. Haldeman. Based on Hill-Burton State plans the need for general hospital, tuberculosis hospital, mental hospital, and long-term-care beds would require an additional 1,132,855 beds. I would like to comment on that, because the number of mental health beds that is included in that total is 428,000. This is, I think, subject to real question.

The problem in this area is not to just build beds. We are going to need a lot of additional mental health beds, but they are going to be in community mental health centers. They are going to be associated with day-care facilities and preventive diagnostic services. So the unit we should be talking about in terms of need for mental health is not this bed figure. Instead, we should speak in terms of centers. Likewise, the number of long-term-care beds that are included in this figure is 546,000 beds.

Now, this figure, I believe, is a relatively good figure of what we need in chronic disease and nursing home beds if we are able to substantially remove the financial barrier to care in these facilities. It is confirmed by the fact that this is about the number of beds that is needed to bring the country as a whole up to the level of these States, that I referred to, that have the higher number of beds. But I don't think that we could afford to build this number of beds under our current situation, because we could not finance and maintain them. These are the beds that are needed to give the kind of medical care we think is required. But patients cannot finance their operation at present.

Mr. Fogarty. But the fact is that there still is a very substantial—a very substantial bed deficiency?

Dr. Haldeman. That's correct.

RELATIONSHIP OF DOCTOR AND NURSE SHORTAGE TO HOSPITAL CONSTRUCTION

Mr. Lesinski. Mr. Chairman, may I follow up your request on the hospital beds? There was testimony here this morning and the other day that there is a shortage of nurses and doctors. Now, if you are supposed to construct all these hospitals at one time, how would you find the doctors and nurses?

Dr. Haldeman. I think we would find ourselves very short if these were all constructed at one time.

Mr. Lesinski. There is a shortage of nurses at the present time?

Dr. Haldeman. That's correct.

Mr. Lesinski. In other words, you mentioned the inability to fund these projects. If you accelerate the building of hospitals too rapidly you would be short of help, will you not?

Dr. Haldeman. Well, sir; I suppose I am a little sensitive to this question, because throughout the life of the Hill-Burton program that question was raised. It was raised real seriously in the first few years because we had a shortage of nurses then and we built over 200,000 hospital beds during that time. Although I know of instances where individual wings or units of hospitals have not been able to open on schedule because of a shortage of nurses, it has not been a problem of sufficient magnitude to make me feel that we should hold back on the construction on that basis.

Rather, I think we must go forward on several fronts at the same time, trying to develop more trained personnel, develop better personnel, and develop more effective use of existing personnel.

Mr. Lesinski. The point that I was driving at, there is no sense of building too rapidly if you cannot staff them properly. You should take this into consideration.

Mr. Fogarty. On that point, if you had not built many of these hospitals in rural areas we just would not have any services in some of these small communities all over the country. The fact that you were able to build these hospitals in these small areas was one way of getting doctors to locate there. And, in the past anyway, you have had excellent results in bringing nurses out. The building of these facilities has helped in one way on the shortage of nurses. Is that still correct?

Dr. Haldeman. Yes, sir; I think it is. There is one small statistic that has come to my attention recently, in connection with accelerated public works programs, because these projects are going into areas with a high degree of unemployment—that for every $10,000 worth of new hospital construction there is a full-time position created in that community for the employment of a person to work in that facility.

Mr. Fogarty. I think the needs are so great and this program is so popular with almost every Member of the Congress, that we will not have any trouble here. At the same time we ought to be doing more in the field of training nurses and much of this will require legislation, of course. This is something the people are demanding. They want good medical care. Somebody has got to pay for it and the building of hospitals today is getting more difficult because of our tax structure. Sometimes it is just impossible to raise the necessary funds locally to build these hospitals. I think you are doing a good job.

Dr. Haldeman. Thank you, Mr. Fogarty.

Mr. Fogarty. Thank you very much.

We will recess and reconvene at 1:30.

WEDNESDAY, MARCH 6, 1963.

ENVIRONMENTAL HEALTH SCIENCES

DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
HARRY G. HANSON, ASSOCIATE CHIEF FOR ENVIRONMENTAL HEALTH, BUREAU OF STATE SERVICES
DR. ARDELL B. COLYAR, CHIEF, ARCTIC HEALTH RESEARCH CENTER
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DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	297	379	474
Positions other than permanent	1	3	3
Other personnel compensation	64	88	95
Total personnel compensation	362	470	572
12 Personnel benefits	32	45	53
21 Travel and transportation of persons	26	42	45
22 Transportation of things	11	22	18
23 Rent, communications, and utilities	52	64	78
24 Printing and reproduction	2	3	3
25 Other services	25	30	63
Research contracts	25	------------	------------
Payment to Bureau of State Services management fund	7	9	26
26 Supplies and materials	56	55	81
31 Equipment	80	17	158
41 Grants, subsidies, and contributions	779	1,479	3,149
Total obligations	1,457	2,236	4,246

Personnel Summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	60	65	78
Full-time equivalent of other positions	------------	1	1
Average number of all employees	47	59	69
Number of employees at end of year	50	66	79
Average GS grade	6.4	7.0	7.5
Average GS salary	$5,683	$6,388	$6,864
Average salary of ungraded positions	$7,642	$7,588	$7,588

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(a) Research	------------	------------	1,630
(b) Training	779	1,479	1,519
2. Arctic Health Research Center	678	757	767
3. Research, training, and technical services	------------	------------	330
Total program costs, funded—obligations	1,457	2,236	4,246
Financing:			
Comparative transfers from other accounts (−)	−1,457	−2,236	------------
New obligational authority (appropriation)	------------	------------	4,246

GENERAL STATEMENT

Mr. FOGARTY. We will now hear from Dr. Anderson, who is the Chief, Bureau of State Services.

Well, Doctor, you are no stranger to this committee. So go right ahead.

Dr. ANDERSON. Mr. Chairman and members of this committee, I have a prepared statement which I would like to submit for the record.

(The statement follows:)

Mr. Chairman and members of the committee, before discussing this proposed new appropriation, I should like to make some general comments about some of the problems we face in the field of environmental health, the areas in which we are making progress, and the highlights of our program proposals for 1964.

The environmental health hazards to which our people are exposed continue to increase due to the change in our technology, and the movement of our population into the metropolitan areas. Several events of the past year have dramatically illustrated some of these hazards. The recent smog episode in London once again has demonstrated the real dangers inherent in our polluted air. The nuclear testing by the Russians and ourselves should make us think of how we can adjust our ways of living and working when we are exposed to varying degrees of radiation. The new book, "Silent Spring," by Rachel Carson has called public attention to the potential dangers from the introduction of pesticides and herbicides into our environment. While the degree of harm caused by using these chemicals is debatable, it is agreed by all that such products cannot be used indiscriminately and be safe. Man cannot continue to develop and use new techniques and products without carefully considering both their acute and long-range environmental effects on our health and well-being.

The environmental health hazards we seek to prevent or control do not assert themselves in the manner of the great single-agent plagues of the past, such as yellow fever, malaria, typhoid, and typhus, which man has now learned how to control. Instead, these new hazards consist of many slow-acting accumulating microinsults to man's body, exacting their ultimate toll by destroying the functional structure and relationships of the organs of the body, but without leaving behind the kind of specific disease-identifying characteristics that bacterial and virological diseases and other acute conditions commonly do.

While this makes it much more difficult for the epidemiologist to indict one or several of many possible agents as causing the net result, it becomes more imperative that we try to do so if life expentancy is to be meaningfully changed.

To meet some of the challenges these old and new hazards present, we are utilizing in all of our environmental health programs the basic public health approaches to these problems which have proven successful in the past. We are conducting research, developing effective control and preventive measures, assisting in the training of specialized health manpower, and fostering through grants and other means, the development of control programs at the State and local level. Where applicable, we are using the enforcement powers provided by Congress to control pollution and contamination.

The Gross committee recommended the expansion of extramural research and training in environmental health, and the 1964 budget provides increases in this area. A total of $19.4 million is requested in 1964 for research grants, an increase of $6 million over 1963. This increase will be used to meet the continuation requirements of grants approved in prior years and to fund an estimated 233 new projects in the areas of air, water, radiological health, occupational health, and milk and food, as well as in the proposed new program of environmental health sciences. The research competencies of universities and other non-Federal institutions are also utilized through contractual arrangements.

Training grants and fellowships will be increased by $2.1 million in 1964, making a total request of $7.5 million. These funds support students at all levels of development, varying from the specialized training of radiological health technicians required by State and Federal laboratories to the postdoctoral level of research training in the broad sciences basic to the study of environmental health. To further meet manpower requirements, we are continuing to increase our direct training activities through offering short, intensive training courses for State, local, and other personnel already actively engaged in health and pollution control programs.

Other increases in grants include a $500,000 increase for radiological health State program control grants to further the development of State radiological health program services; a $125,000 increase for water supply and water pollution control demonstration grants, which will continue the support of practical water pollution control demonstration projects; and an increase of $10 million in the "Waste treatment grant" appropriation to a total of $100 million, the full amount authorized by Congress.

In the direct operations area, we are requesting a total increase of $5.3 million and 339 positions for the environmental health programs. The major increases in this area are $1,377,000 for direct research, $338,000 for direct training activities, $1,972,000 for comprehensive water basin studies, $709,000 for water pollution enforcement activities, and $1,026,000 for all other direct operations, including provision for recently enacted pay raises.

ENVIRONMENTAL HEALTH SCIENCES

We have continued during this past year to work on the organization of programs which we feel will best meet the challenge of today's environmental health problems. Our categorical programs each cover a substantial segment of the environment, but of necessity will focus primarily on controlling the routes of exposure. We are convinced that our present methods of understanding how environmental factors might affect man are not well adapted to the rapidly changing nature of our surroundings. It is manifestly impossible to monitor every new ingredient of our environment to determine by classical toxicological procedures whether it is harmful, or potentially so, and to take appropriate control actions. It is extremely difficult to apply epidemiologic methodology to disease problems existing today resulting from yesterday's exposures to an environment about which we know little except that it has changed and continues to change.

For these reasons we propose to initiate new programs which will be directed at the normal and abnormal physiology of man. These researches which will be conducted in our own laboratories and in academic and other facilities outside of the Service, will require the best talents from the disciplines of biochemistry, physiology, toxicology, pharmacology, and related bio and physical sciences. These researches, we expect, will ultimately provide a better working base for control actions. Unless we can soon be at such a state of capability, the health worker will be placed in the inevitable dilemma of either holding back new technological developments or applications, or anticipating future serious health problems which might have been avoided or modified had health research accompanied the technological development.

The second area of major significance to these programs is concerned with such questions as, What is the total effect of our modern environment on man? Do chemical and physical agents have independent effects on man, or does a synergistic relationship exist? What is the interplay of biological and physical factors in disease causation?

We have experimental evidence that chemical insults may affect latent infections and thus produce cancer, and that air pollutants singly or in combination with infectious agents may also do this. We have strong evidence that chronic respiratory disease bears close relationship to the bioclimate and that food and waterborne agents still are an important infectious disease problem. Beyond this we have a large background of chemical agents whose role in disease causation is suspect. This problem we propose to attack in two ways; first, by improving our understanding of the biological effects, and second, by epidemiological studies. The latter might be more appropriately termed "ecological"—they will necessarily be broad in scope, span greater periods of time, and involve multiple factors. They will extend over larger and more complex dimensions than current epidemiologic techniques can presently manage. New approaches will be involved, and new resources, including those of computer technology, will be employed. Application of the knowledge derived from these studies will permit the most effective, most reasonable approach to control or preventive techniques.

We are proposing, therefore, a new appropriation, "Environmental health sciences," to fund these activities. Included in our proposal are programs of research and training through grants and direct operations, as well as the research activities of the Arctic Health Research Center, which in 1963 were funded in the appropriation for milk, food, interstate, and community sanitation.

RESEARCH GRANTS

We propose to foster increased research in the general environmental health sciences through the establishment of a new research grant program for which we are requesting $1,630,000. While the level of actual endeavor in this research area is falling alarmingly behind the pace of the rapidly expanding environmental health hazards, it is encouraging that the scientific interest and competency to pursue this type of research does exist in many of our universities and research institutions.

Several highly meritorious proposals for support of research projects in the environmental health sciences already have been received, and the National Advisory Health Council has recommended for approval six of these projects. It is our intent to encourage universities to strengthen, augment, and develop research capabilities for the wide array of scientific disciplines which will be needed for investigations of relationships between man and his total environment. Adequate institutional capability for these projects will require, in many instances, the buildup of a variety of disciplines. Therefore, research projects in the environmental health sciences will be larger than most of those in the categorical programs.

Research in the general environmental health sciences will include problems in physiology, toxicology, biophysics, bioengineering, genetics, ecology, behavioral sciences, and others that relate man to his environment in general. The environmental stressor in these problems may be airborne, waterborne, or foodborne, but the specific route is not the point of interest. Emphasis will be on the reaction of the organism regardless of the route of insult, which may involve either normal or abnormal responses to environmental factors. The results of such fundamental lead research will form the foundations for pointed investigations into specific environmental health problems. A strong reservoir of such fundamental and noncategorical research will be of value to the categorical environmental health control programs.

The type of projects we will be supporting involve assessing the impacts of contaminants associated with air, water, food, and soil, and viewing these, along with other factors—social, psychological, economic—in terms of total impact on these resources and on man.

In the area of toxicology there are active proposals to further develop and refine methodology in the detection and quantitation of toxic contaminants. These agents, at low concentrations, indicate only a weak subthreshold action which is difficult to detect and assess, using presently known methods.

Another important field of research under consideration is the study of the relationship between health and the total economy. On the one hand, we need to know what health services the economy can afford, and on the other, how environmental controls affect development of the economy. We must know on what terms our resources can assure a healthful environment for as many people as possible.

It is also planned to support the development of a few university-based research centers in environmental health sciences. These will be developed where the potential capability exists for sustaining a level of scientific effort productive of both research and manpower needed for intelligent management of the environment. Such interdepartmental and interdisciplinary centers will provide the broadest environment for research, will enhance individual and group study, and provide the desired intellectual cross-fertilization required to solve complex environmental health problems.

TRAINING GRANTS

This new appropriation contains a request for $1,519,000 for research training grants which were formerly carried in the NIH "General research and services" appropriation. The development of the scientific capabilities of the Nation in the effective research, training, and control operation field of environmental health sciences, demands an increase in the number of individuals undergoing research training at graduate levels in the sciences. There is urgent need to stimulate, encourage, and, in meritorious cases, support the development and expansion of academic capabilities that can provide adequately for graduate training in the broad spectrum of scientific disciplines which make up the environmental health sciences. In order to achieve this objective we are proposing that these grants be administered by the environmental health program so that primary program emphasis can be given to the support of strong institutional training programs in biological chemistry, industrial toxicology, sanitary and chemical engineering, ecology, instrumentation development, mathematical systems analysis and operation, and other such programs, all of which call upon the full array of professional disciplines. Realization of this goal is indispensable if public health administration in this country is to have the quantitative and qualitative capacity to comprehend, evaluate, and move effectively with the swiftly developing and changing complex of environmental health problems.

The composite scientific team working in the broad fields of environmental health research, research teaching, and control operations, must include highly and broadly trained engineers, biologists, social scientists, physicians, toxicologists, pharmacologists, physiologists, systems analysts, chemists, economists, instrumentation specialists, and mathematicians among others. This spectrum of intellectual resources from which environmental health programs must draw is obviously extremely broad, and extends well beyond that which has, in the past, been utilized in public health.

The primary purpose of this grant program is to stimulate and support the development of environmental health sciences training programs as an integral part of broad environmental sciences research at those universities where the potential capability exists for developing and sustaining a level of scientific manpower responsible to the needs of basic research, teaching, and control operations in environmental health.

If the necessary manpower is to be developed in the environmental health sciences areas, such programs must lead to the development of interdepartmental and interuniversity type research and training centers which will enhance individual and group study, develop talents and skills, and provide the desired intellectual cross-fertilization required to solve most environmental health problems. This purpose will be served through provision of support for the enrichment and expansion of graduate level faculties, for stipends for master's, doctorate, and postdoctorate students, and for the tools of laboratory research. Priority will be given to those schools which have strong premedical, medical, engineering, biological, and physical sciences, and public health facilities and curriculums, and where an interdisciplinary relationship is possible. We will seek to strengthen existing schools with established reputations of excellence, and develop others showing interest and promise. In 1964, we estimate that approximately 30 grants will be awarded.

DIRECT RESEARCH

Included in this appropriation is a request for 10 positions and $270,000 to initiate a new program of direct research in environmental health sciences. The need for such a program and its basic functions was well summarized in the report of the Committee on Environmental Health Problems, the Gross Committee, appointed by the Surgeon General to advise him in the development of long-range objectives for the environmental health program of the Public Health Service. This report recommended the establishment of scientific groups, independent of the existing divisional structure and with separate budgetary provision. "These groups," the report continued, "which would include biological, physical, and social scientists as well as mathematicians, would study basic problems in environmental health, undertake research on problems of common interest to the several divisions where desirable, provide central services in mathematics, statistics, data processing, information storage and retrieval, instrumentation, and analytical laboratory procedures, etc., and provide advice and consultation to the Bureau of Environmental Health with respect to the overall direction of research. Beyond these functions, these groups would be specifically charged with the continuing responsibility for an overall purview of the entire field of environmental health."

The proposed staff of 10 scientists and supporting personnel will form a nucleus to be used chiefly in developing a comprehensive program for studying man in his total environment. Initial efforts will be concentrated in the areas of toxicology, pharmacology, physiology, and applied mathematics and statistics.

ARCTIC HEALTH RESEARCH CENTER

The Arctic Health Research Center is the only institution in the Western Hemisphere devoted solely to the scientific investigations of the civilian health problems of low-temperature areas. The military services contribute to the knowledge of survival and field operations under arctic conditions, and the Department of Agriculture is developing crops and farm methods adapted to Alaskan conditions. The PHS, however, is concerned with the health of man in his home and community. Since 1948 the Arctic Health Research Center has conducted a program of research and demonstrations in Alaska. Subjects for investigation have been selected on the basis of the need for knowledge of factors important to living and homebuilding in low-temperature areas, and the urgency of existing health problems. The request for funds this year to plan permanent facilities for our Alaskan operations is a step toward meeting our responsibilities there.

The growing importance of the world's high latitudes was highlighted last summer by an international conference in Geneva on "Medicine and Public Health in the Arctic and Antarctic," sponsored by the World Health Organization, to which 10 countries sent 33 official delegates. It gave recognition to the many common problems shared by northern populations, and to the physical and biological similarities of the polar regions. It helped to highlight the need for better knowledge of the effects of arctic environment on man and his health problems. Experience in living and working there and knowledge of its environment, strengthened the vital role of Alaska in our national economy and defense plan.

Only as fast as man comes to grips with the health hazards of this environment will our last remaining frontier be developed. The potential rewards are many, for Alaska contains great undeveloped reservoirs of strategic materials, minerals, and vegetation that can enrich both the State and the Nation. This year, oil production increased 59 percent over 1961, to total over $28 million, ranking first in the State in value of recovered resources.

The Center is engaged in research directed at the unique problems of healthful living in the Alaska environment. Basic and applied research is being conducted in water supply and waste disposal, infectious diseases, dietary deficiencies, animal-borne diseases, and insect control. None of these areas is new to public health, but their environmental setting in most of Alaska is different enough to require special research. Some problems can be solved by conventional methods; others require adaptation and new approaches because of the unique features of arctic environment, such as long seasons of low temperatures, vast areas of permanently frozen ground, and prolonged periods of light and darkness.

Moderate expansion of investigations of methods of providing winter storage of water, disposal and treatment of wastes under low-temperature conditions, and increased field investigations of infectious diseases were made possible by the 1962 and 1963 allowances. In 1964, program activities will be continued at the 1963 level.

Dr. ANDERSON. Mr. Chairman and members of the committee, I should like to review briefly some of the problems we face in the field of environmental health which will provide a backdrop for discussing our request for a new appropriation—"Environmental health sciences."

HEALTH HAZARDS INCREASING

Several events of the past year have dramatically illustrated some of the increasing health hazards in our environment. The smog episode in London once again has demonstrated the dangers inherent in our polluted air. The testing of nuclear weapons by Russia and ourselves reminds us that we must adjust our ways of living and working when we are exposed to varying degrees of radiation. The new book, "Silent Spring," by Rachel Carson, has called public attention to potential dangers from the use of pesticides and herbicides.

Man cannot continue to develop and use new techniques and products without carefully considering both their acute and long-range environmental effects on our health and well-being. The environmental health hazards we seek to prevent or control do not assert themselves in the manner of the great single-agent plagues of the past such as yellow fever, malaria, typhoid, and typhus, which man has now learned how to control. Instead, these new hazards consist of many slow-acting, accumulating, microinsults to man's body, exacting their ultimate toll just as surely.

While this makes it much more difficult for the epidemiologist to indict one or several of many possible agents as causing the end result, it becomes more imperative that we try to do so if life expectancy is to be meaningfully changed as the years go by.

NEW APPROPRIATION PROPOSED

We are proposing, in 1964, a new appropriation, "Environmental health sciences," to fund the extramural and intramural research and training activities basic to all the environmental health programs. These, together with the categorical program activities, will make possible a broad approach to the study of man's health as it is related to his environment.

Our proposal here is in line with a recommendation of the Gross committee and stems also from our continued study this past year of the organization of programs which we feel will best meet the challenge of today's environmental health problems. We are convinced that our present methods of understanding how environmental factors might affect man are not well adapted to the rapidly changing nature of our environment. It is manifestly impossible to monitor every new ingredient of our environment and to determine by classical toxicological procedures whether it is harmful or potentially so. It is extremely difficult to apply epidemiologic methodology to disease problems existing today, resulting from yesterday's exposures to an environment about which we know little except that it has changed, and it continues to change.

We propose therefore to initiate new approaches which will be directed at the study of the normal and abnormal physiology of man. These researches will require the best talents from the disciplines of biochemistry, physiology, toxicology, pharmacology, and related bio- and physical sciences, and will, we expect, ultimately provide a better working basis for control actions. Unless we can soon be at such a state of capability, the health worker will face the inevitable dilemma of either holding back new technological developments or applications, or anticipating future serious health problems which might have been avoided or modified had health research accompanied the technological development.

We have experimental evidence that chemical insults may affect latent infections and thus produce cancer, and that air pollutants, singly or in combination with infectious agents, may also do this. We have strong evidence that chronic respiratory disease bears close relationship to the bioclimate. Foodborne and waterborne agents still produce significant infectious disease problems. In the long view, however, chemical agents whose role in disease causation is suspect will become relatively more important.

NEED FOR BROADENED AND IMPROVED RESEARCH

In dealing with this situation, we are faced with the fact that current methods, either epidemiological or in the laboratory, are inadequate for the job that must be done. The relationship of an acute illness to a recent episode is a relatively simple part of the problem. Where exposures are at subclinical levels, or where they may be intermittent over long periods of time, an entirely different methodology is required. Measurement in the very dilute concentrations of chemicals in the environment and the body requires new techniques. The concept of chemical latency in the biosystem has not been explored, and we have only sketchy knowledge of the cumulative damages that may result from exposure to undesirable environmental components.

This problem we propose to attack by first improving our understanding of the biological effects, and second by epidemiological studies. The latter will necessarily be broad in scope, span greater periods of time, and involve multiple factors. They will extend over larger and more complex dimensions than current epidemiologic techniques can presently manage. New approaches will be involved, and new resources, including those of computer technology, will be employed.

BUDGET REQUEST FOR 1964

We are requesting $270,000 and 10 positions to inaugurate a program of direct research in this area. Initial efforts will be concentrated in the areas of toxicology, pharmacology, physiology, and applied mathematics and statistics.

We are also proposing to support research and training in universities and other institutions through grants. We are requesting $1,630,000 in research grants to support projects in the sciences that relate man to his environment in general.

For training grants, we are requesting $1,519,000 to finance 30 projects formerly budgeted in the National Institutes of Health general research and services appropriation.

Funds for the activities of the Arctic Health Research Center, formerly financed in "Milk, food, interstate, and community sanitation," have now been transferred to this appropriation. Experience in living and working in Alaska and knowledge of its environment strengthen the vital role of that State in our national economy. The request for funds in another appropriation this year to plan permanent facilities for our Alaskan operations is a step toward meeting our responsibilities there.

Mr. Chairman, I shall be glad to answer any questions the committee may have, and I have Dr. Ardell B. Colyar, from the Arctic Health Research Center here, as well as my associate, Harry G. Hanson, in the field of Environmental Health.

ACTIVITIES UNDER ENVIRONMENTAL HEALTH SCIENCES APPROPRIATION

Mr. FOGARTY. This is a new item in the budget. It will finance activities formerly financed under "General research and services, NIH," and "Milk, food, interstate and community sanitation." These activities are budgeted for $2,236,000 in 1963 and the request for 1964 is $4,246,000, an increase of $2,010,000 and 13 positions.

In the introduction to your justifications you say:

> This appropriation will finance those activities which are basic to the environmental health programs, but which cannot be classified into any one of the five categorical programs.

Would you give us a few specific examples?

Dr. ANDERSON. Yes. One of the findings of the Committee on Environmental Health Problems, and reported in their document under the heading of "General Background," was that there was in addition to need for specific research on problems of air pollution, water pollution, radiological health, milk and food protection, and industrial hygiene, there was need for some basic studies, and integrative studies, which related the effect of the environment upon biological systems, particularly man.

NEW RESEARCH TECHNIQUES NEEDED

One of the things that we think is important here is the development of new techniques, to study the effects of chemicals, and other agents, such as heat, light, and radiation on our biological systems.

Currently, for example, the techniques used in toxicological investigation involve considerable periods of time, and a considerable amount of money.

It has been estimated, for example, that $100,000 today is required to find out what one specific chemical might have in the way of an effect upon the body. If we were to multiply that by the 500 new chemicals a year that enter the industrial life of our country in mass production, and used in industrial processes, we begin to get a picture of the amount of money totally that might be involved, using classical toxicological methods; 500 times $100,000 is $50 million, just to keep current with 1 year's new chemicals that are put into the environment. These 500 however, come from a total of about 10,000 new chemicals that are experimented with in industrial and research laboratories around the country.

In fact, the methods that are used are so cumbersome, that it has been estimated by one expert in the field that it would take us 20 years to catch up on the chemicals that have been introduced in our past history to find out what they might be doing to us, if we were to use the classical methods.

EXAMPLES OF NEW TECHNIQUES

Now, one approach that might be used here would be to adapt the tissue cell culture technique, that has been so useful in medical research in the study of viruses and bacteria, to a study of chemical agents and their effect upon life. We have had discussions with one of the outstanding tissue cell culture experts in the country about the application of this tissue cell culture technique to the study of toxicology of chemical agents. He has become very enthusiastic about this. We are talking about developing the tissue cell culture technique in such a way that we can produce not only individual cells of the different organs, for example, lung cells or liver cells or kidney cells; spleen cells; but we can develop masses of cells which will function much as do the cells function in the body. He proposes to do this through very carefully controlling the media, the liquid, in which these tissue cells grow, and by removing the self-generated poisons, the metabolites of these tissue cell cultures, and by introducing the new nutrients—enzymes and hormones—that these new cells might need, in such a way that these cells might go on living much as they would in the fluid state of the cells within the body.

He thinks that through this device he can get early information about the physiologic effect of chemicals upon the substances that cells produce. This might be enzymes that are useful in the body, and this is one of the effects of the chemicals. They change the enzyme system. He might produce information about destruction of cells under the chemical onslaught, and he also might be able to get information about possible genetic effects of chemicals and physical agents, by introducing them into this system in which he would be producing masses—clumps, if you will—of cells, which would be functioning much like they would in the body.

He has indicated to us that he is highly intrigued, and interested in this possibility and he wants to join our staff. Such would be funded out of this appropriation to start work upon this project.

This is the particular example that is in mind, Mr. Chairman, and members of the committee, which would be funded with this appropriation here.

NEED FOR PROGRAM

Mr. Fogarty. Well you are not going to get off to a real good start with the meager amount you are asking in this appropriation for such problem. As you have just related, we are 20 years behind times now, in catching up with problems regarding chemicals. It is going to take you a long time to catch up, going along at the pace set by this budget.

Dr. Anderson. But this will be a start, sir, and a very important one, we feel.

Mr. Fogarty. It is not enough, compared to the problem, in my opinion. We have had a lot of talk about chemicals—we have thousands of chemicals being used in industry and agriculture, getting into the water, the air, and our food. That is a tremendous problem in itself, is it not?

Dr. Anderson. Yes, sir.

Mr. Fogarty. Just that one phase of it?

Dr. Anderson. Yes, sir.

Mr. Fogarty. And we are way behind in that area, people tell me.

Dr. Anderson. That is correct.

Mr. Fogarty. Now, assuming we go ahead and build the Environmental Health Center, it is going to take 4 or 5 years before it will be in operation.

Dr. Anderson. Yes, sir. Six, more likely.

Mr. Fogarty. So that is quite a way off and this problem is urgent enough that we have to do something in the meantime, do we not?

Dr. Anderson. Yes.

Mr. Fogarty. This appropriation you are asking for in this budget is just a drop in the bucket as far as getting a real program started to properly deal with all these toxic agents. I am afraid we are moving too slowly.

COMMUNICABLE DISEASE CENTER TOXICOLOGY RESEARCH

What is being done now at the CDC?

Dr. Anderson. With regard to toxicology?

Mr. Fogarty. Yes.

Dr. Anderson. At the Communicable Disease Center, they are studying the effects of some of the typical pesticides that are used in mosquito control and other insect control operations. Particularly, they have been devoting much of their attention to the study of DDT and its effects when people are exposed to it over a long period of time.

The Communicable Disease Center got into this program years ago, as Mr. Hanson well remembers, when it was engaged in malaria control operations. One of the concerns of the health workers in this field was that the insecticides that were used for malaria control did not damage the operators who were dispensing DDT to control malaria.

Mr. Fogarty. So we are doing some work down there, in the area of insecticides and pesticides?

Dr. Anderson. Yes, that is one of the singular activities of the Public Health Service in this field.

INTERDEPARTMENTAL COOPERATION ON INSECTICIDES

Mr. Fogarty. What is the Department of Agriculture doing in this area? Do you know?

Dr. Anderson. Generally, the Department of Agriculture, with regard to research, is working on newer methods, better methods of controlling insects, with substances that will have less persistence in the environment or will be less available to other species of life, plant life or animal life, and therefore will have less adverse effect upon life that we desire to preserve. This is in addition to their regulatory activity under the Insecticide, Fungicide, Rodenticide Act.

Mr. Fogarty. Do you work with them?

Dr. Anderson. Yes, we do. We have several devices by which we work. One is a formal device which I mentioned the other day, the Federal Pest Control Review Board, on which the Department of Agriculture, and the Department of the Interior, Public Health Service, the Food and Drug Administration and the Department of Defense are represented. This board reviews all operations of their departments in which pesticides are used, to see that the program operates to achieve its effect and does so with the least adverse effect upon other departments' interests.

For example, if there is a program which might operate in such a way that food supplies were in danger, or the health of the people was in danger, in the area, our Department of Health, Education, and Welfare would look at these from that standpoint, and raise questions with the Department of Agriculture, as to the practices that might be involved, and the Department of Agriculture and we would work out modified ways of operating these programs.

This is, simply stated, what the Federal Pest Control Board has been doing.

In addition to that, scientists from the Public Health Service and these other departments, meet in what is called an Interdepartmental Pest Control Committee, to exchange scientific information about pesticides and their effects, and the newer ones as they are coming on the market, so that there is an exchange of technical information here among the Government's scientists about the pesticides.

Mr. Fogarty. What about the Food and Drug Administration? What do they plan?

Dr. Anderson. The Food and Drug Administration is concerned with the control and regulation of foods and cosmetics, and other hazardous substances. Their efforts are designed, as I think of them, to regulate the exposures that people might get to these substances, when they are contained in these items of the environment, and as they move through interstate commerce.

Mr. Fogarty. And also to see that they are properly labeled.

Dr. Anderson. Yes.

Mr. Fogarty. And proper warning is given regarding any substance that might be poisonous?

Dr. Anderson. Yes.

SPRAYING APPLE ORCHARDS

Mr. FOGARTY. I remember they had a problem several years ago with the applegrowers in the State of Washington about the amount of spray that was being used on the trees. I think it was Food and Drug that spent considerable effort to get that straightened out.

Dr. ANDERSON. It was the Department of Agriculture, sir.

Mr. FOGARTY. Oh, the Department of Agriculture?

Dr. ANDERSON. Yes; and the substance was arsenic at that time, and there was some concern about the residues of arsenic that might appear on apples in the apple orchards.

Mr. FOGARTY. I thought Food and Drug handled that.

Dr. ANDERSON. Well, Food and Drug would certainly come into that if there were residues on the apples that moved in interstate shipment.

There was local concern within the State about this problem, too, from the standpoint of human health. I don't remember the year.

Mr. FOGARTY. It was around 1947 or 1948. Mr. Cannon had a special committee meeting on this problem. It was controversial between the growers and the Department of Agriculture and the Food and Drug Administration, I remember.

Mr. DENTON. We have had something about that since I have been on the committee.

Dr. ANDERSON. The Congress, Mr. Chairman, did move at that time the specific program in that area from the Department of Agriculture to the Public Health Service. We still operate a station at Wenatchee, Wash., which is continuing to work upon the problems of insecticide use as they relate to the apples growing in that area and now, with the development of irrigation and reclamation in the Columbia River Basin, they are working on some other problems, too.

Mr. FOGARTY. That is under CDC?

Dr. ANDERSON. Yes, sir. That is a field station of CDC.

Mr. FOGARTY. I remember when I was a young fellow, my father used to spray our apple trees about once or twice a year. Now they spray them much more.

I saw a movie of the State of Washington the other night and saw them spraying these big orchards. They seem to spray them for many things, don't they?

Dr. ANDERSON. They spray them for many purposes; yes, sir.

Mr. FOGARTY. I don't know how they keep up with all of this but in this area, it looks to me as though the Public Health Service has some responsibility, as well as the Department of Agriculture, and the Food and Drug Administration.

Dr. ANDERSON. That is correct.

Mr. FOGARTY. Are there any other agencies?

Dr. ANDERSON. The Department of Interior certainly has a responsibility too. They have several concerns in this, and one, particularly, is their concern with fish and wild life, and their protection and propagation. On the other hand, they also have a concern with regard to the irrigation and reclamation of desertland. Once you introduce water in these arid areas, the insect population of the area changes; new species are introduced.

Mr. FOGARTY. A good example is the changes created by Grand Coulee Dam.

Dr. ANDERSON. That is correct; in some of those areas, mosquito populations, pest populations, where land has been reclaimed, and water introduced, are so high that at times people refuse to go and work in the field, because the bites are so frequent and so severe.

Dr. TERRY. Forestry, too?

Mr. FOGARTY. That is four departments. Are there any other departments that share some responsibility in this whole area?

Dr. ANDERSON. With regard to pesticide, sir?

Mr. FOGARTY. Yes.

Dr. ANDERSON. Those are the four principal departments. Commerce, of course, might be concerned because of the industrial aspect in the pesticide industry.

Labor might, in turn, be involved, too, because of their concern with the safety of labor.

LOCATION OF BASIC RESEARCH

Mr. FOGARTY. In the overall program where will the basic studies be carried on?

Dr. ANDERSON. In the kinds of studies that we are proposing here which are basic studies in toxicology, we agree with the findings of the Gross Committee that such basic studies, as far as our own effort in-house studies is concerned, should be done at the Environmental Health Center, in association with the technical assistance training and field operational activities that are directed out of that Center, because when you have basic research, close enough to the problems and pressures that field operations are getting, basic research will pursue as its own objective those of the programs which it is designed to support.

Our basic research at the Center would be adaptations to our basic program principles. The tissue cell culture system I mentioned is an adaptation of a basic principle to the use that we would have in the environmental health field.

We would locate these basic activities in the Washington Environmental Health Center.

Mr. FOGARTY. What about the studies of agricultural chemicals like insecticides and herbicides?

Dr. ANDERSON. Many of them, as they relate to Agriculture's basic studies, go on at Beltsville, with regard to Fish and Wildlife Service. These studies in the Fish and Wildlife Service are directed from the Patuxent River Fish and Wildlife Research Station, which is nearby in Maryland. The Food and Drug Administration has its basic laboratories here in the Washington area.

TOXICOLOGICAL RESEARCH

Mr. FOGARTY. In a general way, what is the type of research that is necessary to support work in toxicology tolerances and safety?

Dr. ANDERSON. Well, I illustrated one kind of research which we would do in the field of toxicology, namely, to work out methods of assessing the biological effect of new chemicals and substances which do not involve such a long and expensive procedure, as are involved now.

Another kind of research that we would do, would be to study some of the substances, or classes of substances, or group of chemical components, let's say, that might be involved in several of our individual control programs.

The chemical might be found, for example, in the air, in water, and maybe in food, and may be even in clothing or in the house; we would want to make certain that we were assessing the full impact of this chemical in this integrated research program that we are beginning to initiate here in the item that is before you.

TOLERANCE LEVELS

Mr. Fogarty. What about tolerance levels?

Dr. Anderson. If you are thinking of tolerance levels as they relate to foods, they are set by the Food and Drug Administration; there is input into their consideration in setting these tolerance levels, from their own laboratories, from industry, and also from the Public Health Service laboratories.

One of the things that we would do in our toxicological activity in this environmental sciences office that we are setting up here, would be to make certain that our information did get into the Food and Drug Administration considerations at the time any substance might be coming up for a tolerance setting level, or if you got additional information, which was important and might bear upon their changing the tolerance.

Mr. Fogarty. What about the safety factors in this case?

Dr. Anderson. Well, here again, the safety aspects of the chemicals and toxic substances is a concept that is inherent in food and drug activities, as they set tolerances. They lean heavily upon the side of safety in the setting of any tolerance levels. Our activities with regard to safety are primarily directed at the people who use these chemicals and substances in their industrial work or in their domestic life; it is an educational program, if you will, to try to cut contamination off at its source.

PESTICIDES EFFECTS ON MAN

Mr. Fogarty. In general, what sort of toxicological research is going on in pesticides and other economic poisons?

Dr. Anderson. In the Government Public Health Service?

Mr. Fogarty. Either there or in Agriculture.

Dr. Anderson. Within the Public Health Service we are supporting work through grants and through direct operations, work relating to how some of the classes of pesticides might affect cells or organs of the body and what they might do with regard, pretty much, to immediate, acute exposures.

By and large, the kind of research that has not been emphasized in the Public Health Service and by most other workers has been the effect of pesticides when taken in small amounts over a long period of time, and how people get such exposures and how they might be minimized.

Mr. Fogarty. I would like you to say something about what is going on and what should be done in the research area with regard to food additives, water pollution, air pollution, toxic substances, and industrial wastes.

Dr. ANDERSON. The Food and Drug Administration has a considerable interest in the program and possibly you already questioned them on this.

REPORT OF THE COMMITTEE ON ENVIRONMENTAL HEALTH PROBLEMS

With regard to specifics of what might be done, there are findings of subcommittees, reported in the Report of the Committee on Environmental Health Problems, with regard to each of these areas, and if you would wish me to select out some of the areas that were searched, I would be glad to do that.

Mr. FOGARTY. All right.

Dr. ANDERSON. I will supply that for the record.

(The information follows:)

PROBLEMS IN ENVIRONMENTAL HEALTH: SOME EXAMPLES

Example 1

THE PROBLEM OF AIR POLLUTION

Polluted air is a product of industrialization, urbanization, and human mobility, all of which will continue to increase rapidly in the years ahead. The concern with air pollution in urban areas relates to the emission of a variety of gases and particles, often followed by secondary reactions in the air. Recent evidence has made clear that all metropolitan areas have limited air resources. Even in areas where the meteorological conditions are favorable, air resources are being heavily utilized, and in some cases acceptable concentration limits have been exceeded. Basically, the total potential quantity of pollutants discharged to the atmosphere relates to two factors—the size of the population, and the per capita use of energy and materials.

That air pollutants can affect health has been demonstrated conclusively in several disasters in which many people were made ill and human deaths occurred. Among the more dramatic are the episodes in Donora, Pa., where 20 people died; and in London in 1952, when the normal mortality rate was exceeded by 4,000 additional deaths in a single week. A growing body of circumstantial evidence testifies that long-term low-level air pollution exposures can contribute to and aggravate chronic diseases which affect large numbers of our population. Economic damage to crops, animals, and structures are manifest—totaling billions of dollars annually.

The national application of what we now know about controlling air pollutants is unsatisfactory.

Procedures for the identification of specific compounds contributing to air pollution are largely tedious and expensive, and few laboratories are equipped to undertake such determinations. The chemical composition and physical state in which air pollutants occur are of increasing importance; for example, particle size as it relates to the physiology of the pulmonary system. For only a small number of the simpler gases such as sulfur dioxide, hydrogen sulfide, and carbon monoxide are analytic methods available and for these, simpler and less expensive procedures are desirable. There is need to measure at frequent intervals such substances as aldehydes, olefins, polynuclear aromatic compounds, and others, the number of which will be multiplied many times over in the years ahead.

The history of technology indicates that the patterns and the types of these emissions and sources will change in the future. However, the precise direction in which these changes will occur cannot be predicted.

In all urban areas motor vehicle emissions are in varying degrees already a significant source of pollution. The interrelationship between hydrocarbons and oxides of nitrogen when photochemical air pollution (smog) is produced in the presence of sunlight needs further elucidation. The role of particulates in the formation of smog and the mechanism by which smog irritates the eyes and causes damage to vegetation will require further research.

The formation of ozone and other oxidants, associated with undesirable biologic effects and characteristic of photochemical smog, is known to result from reactions among gases at concentrations of a very low order at which they are relatively innocuous. Control of such secondary reactions requires identification of the participating primary pollutants and determination of the relative importance of each in the photochemical processes. Changing technology necessitates fundamental studies in photochemistry. The identification of primary reactants associated with secondary toxicants will facilitate the development of more effective and less costly controls. Adequate knowledge of the intermediate and secondary products must be acquired before their biologic effects can be fully assayed and understood.

A fundamental scientific problem is that of establishing relationships between meteorological parameters and dispersive capacities. Objective determination of reasonable emission rates and the degree of control required for single sources in a given community are dependent to a considerable extent on research in this area.

Studies are required that will provide a sound basis for future estimates of national losses from (1) damage to crops and livestock, horticultural products, and other types of vegetation; (2) corrosion of materials and soiling of surfaces; and (3) interference with ground and air transportation. Economic losses due to the expenses of illness and diminished productivity resulting from air pollution are unknown, as are the effects of air pollution upon the general well-being of healthy individuals.

It is already recognized that mortality surveys, by themselves, are not sensitive enough to reflect the subtle influence of minute concentrations of toxins in the atmosphere. The use of morbidity data for this purpose has been hampered by the fact that concurrent air sampling and usable morbidity data have been almost nonexistent. Any leads that indicate differences in morbidity—or less probably, in mortality—must be followed in an attempt to relate health effects to a specific pollutant or class of pollutants. To complicate the problem, traditional statistical methodology requires improvement by incorporation of better methods for analyzing the vast quantities of data that accrue from long-term observations. Too, the problems of measuring morbidity have required development of new techniques. Assessment of illness due to air pollution requires more, generally, than the usual medical questionnaire or routine physical examination. Some objective measures of physiological processes and their changes have been developed and more are required.

Since the respiratory tract is the portal of entry for inhaled substances, an intensive effort has been directed toward pulmonary function testing as an indicator of the physiologic effects of air pollutants. Procedures that had previously seemed adequate for day-to-day followup of patients responding to treatment, for single observations in the routine diagnostic workup of the clinic, and for the measurement of gross functional aberrations, have not proved suitable for use in the field.

Until pulmonary function testing is standardized, epidemiologic studies that rely on such measurements as an index of physiologic changes will have little comparability. Studies, now underway, to assess methods and evaluate techniques must be intensified. Research on health effects has been mainly an attempt to associate individual pollutants with a group of diseases. Research must also be directed toward tissues other than those with which pollutants make first contact.

We know that human panels exposed to irradiated mixtures of individual hydrocarbons and nitrogen dioxide experience eye irritation. The problem of what constituents in smog are actually responsible for this biologic manifestation will probably not be resolved until an objective test—perhaps an electrophysiologic technique—can be devised, that will permit precise measurements, reflect sensory components, and eliminate psychic influences. Apparently a number of factors in the original mixture determine the occurrence and the degree of eye irritation. The reaction products mainly responsible are thought to be formaldehyde, acrolein, and peroxyacyl nitrate.

Because a number of statistical studies have indicated a higher incidence of lung cancer in urban than in rural areas and because such well-known experimental carcinogens as benzpyrene have been found in community air, the finger of suspicion has been pointing for some time to atmospheric benzpyrene and related aromatic polycyclic hydrocarbons as at least contributory etiologic agents in lung cancer. Certainly it does not seem possible to attribute the alarming increase in lung cancer incidence to smoking alone. A growing body of experimental evidence incriminates atmospheric hydrocarbons.

All organic fractions of airborne particulate matter from U.S. cities are capable of producing local skin tumors after subcutaneous injection in mice, and chronic low-level exposure seems to be more injurious than brief heavy exposure. Animals exposed to both the virus of influenza and inhalation of ozonized gasoline develop true epidermoid cancers in the lung. The applicability of such evidence to human disease is as yet uncertain, but the research leads now developed should be followed up intensively.

A casual relationship between air pollution and the group of chronic obstructive ventilatory diseases that appear to be increasing in incidence in this country has not been definitely established. But isolated research findings that asthmatic attacks occur more frequently on days with smog damage to plants, that emphysema patients improve on breathing filtered air after several days' exposure to smog, and that the daily course of patients with chronic obstructure respiratory disease fluctuates with certain pollutant levels strengthen the conviction held by many experts in the field that these indicated relationships may be important leads to definite knowledge—leads that should be vigorously pursued.

An integrated research effort, utilizing laboratory techniques, statistical methods, and the epidemiologic approach, along with intensified chemical, meteorological, physical, and engineering studies, provides the hope for a solution to these problems. Alone, no one method can hope to accomplish this aim.

Example 2

THE PROBLEM OF WATER POLLUTION BY INDUSTRIAL WASTES, INCLUDING RADIOACTIVITY

Organic industrial wastes

Studies and surveys by the Public Health Service in recent years indicate that the amount of organic industrial wastes (treated and untreated) now going into the Nation's watercourses is about double the amount of municipal wastes; that is, a "population equivalent" of 150 million persons.

The increase in organic industrial wastes since 1900 and estimated amounts 1970 and 1980 are shown in the following table:

Increase in organic industrial wastes

Year	Index of [1] industrial production	Population equivalent discharged (in millions)
1900	20	15
1920	40	49
1940	66	75
1950	113	100
1959	159	150
1970	[2] 246	[3] 210 [4] 50
1980	[2] 367	[3] 310 [4] 80

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[1] Based on 1947–49=100: from Federal Reserve Board Index of Production, 1900–59.

[2] Estimated by National Planning Board, "National Economic Projections," from annual growth rate of 4.1 percent.

[3] Assumes estimated percent rate of industrial waste treatment construction will continue.

[4] Assumes 80 percent removal of population equivalent by treatment will be obtained

By 1975, industry is expected to more than double the production attained in 1950. This would indicate a possible doubling of present organic wastes by 1980 which may be tempered by certain technological and engineering developments, and the extent to which industry met its responsibilities for satisfactorily treating its own wastes.

These data show that substantial reductions in industrial organic pollution loads can be effected by waste treatment if industry can attain 80 percent removal of "population equivalents." Such reductions will require a greatly accelerated construction program and the development of new treatment processes, because fully effective measures have not yet been developed for many organic industrial wastes. The table also indicates the pollution situation that will exist if the present rate of treatment construction continues or if treatment processes are not found which can approach 80 percent removals.

Inorganic industrial wastes

There have been large increases also in the discharge of the "common" inorganic industrial wastes (principally of mineral and chemical origin). These wastes have polluting effects different from organic wastes and cannot be measured in terms equivalent to sewage.

Inorganic wastes originate from metal pickling, acid mine drainage, metal finishing, chrome tanning, and from the mining, processing, and manufacture of a wide variety of metal and chemical products. Also organic wastes often contain substantial amounts of inorganic constituents. Production figures for the industries discharging inorganic wastes show that the amounts are very large and the index of industrial production indicates they are increasing rapidly. Fully effective treatment processes have not yet been developed for many inorganic industrial wastes.

New chemical wastes

The chemical industry is the fastest growing segment of American industry and some of its growth is reflected in the following table:

Leaders in synthetic organic chemical growth [1]

[Production in million pounds]

	1928	1938	1940	1958
Plastics	20	130	1, 486	4, 518
Synthetic rubbers	0	5	1, 173	2, 202
Synthetic detergents and other surface-active agents	----------	15	375	1, 335
Nylon and other noncellulosic fibers	0	0	66	489
Insecticides and other agricultural chemicals	0	8	97	539
Medicinals	4	13	43	101

[1] Source: The Chemical Industry Facts Book 1960–61 Edition.

Synthetic dyes, adhesives, surface coatings, solvents, and many other industrial, agricultural, and commercial products have also registered substantial production growth.

A major new water pollution problem has emerged with the growth of the synthetic chemical industry. Wastes from this industry are reaching watercourses in increasing numbers and amounts each year, both from the use of the manufactured products and from wastes produced during their manufacture. These chemicals reach the stream by way of municipal and industrial sewers, land drainage, or indirect application of chemicals to the stream, lake, or impoundment.

Wastes and products originating with the synthetic chemical industry are extremely complex in their composition and behavior. Some cause tastes and odors and a large number are highly toxic to fish and aquatic life. Many do not respond to biological treatment and persist in streams for long distances. We do not know how to detect most of these compounds in water, or how to treat them in waste effluents or remove them from water. Most important, we do not know the long-range toxic effects of these new synthetics on man.

The new synthetic wastes are present in low concentrations in most waters for the moment, but the industry is continuing its rapid growth. Each year we are finding increasing amounts of these wastes at our water supply intakes, and since neither our sewage nor our water treatment plants remove them, they are reaching the consumer in increasing amounts.

Radioactive wastes

Still another new water pollution problem of serious potential has emerged in recent years from the growth of nuclear technology. The presence of radioactive materials in our streams is adding another new contaminant to the Nation's water supply that has serious health implications if not controlled.

Pollution by radioactive materials from nuclear weapons testing is well known. Waste products from mining and refining radioactive minerals, such as uranium or thorium, may be discharged into streams. Waste products from refined radioactive substances used in power reactors or for industrial, medical, or research purposes require adequate control measure to prevent dangerous concentrations from escaping to streams.

Radioactive materials are characteristic of a newly developing class of water pollutants that are subtle in effect and not detected by the usual stream pollution analyses. Even so, their control is a problem in principle no different than the control of the more common types of wastes, and in this instance the only practical means of protection against human exposure to radioactive wastes in water is treatment and control of such wastes at their source. Since radioactivity exposure effects are cumulative, these controls must be effected in light of total human exposure in the environment.

Heat

"Heat pollution" is becoming an increasing matter of concern to water pollution control administrators and conservationists. Since 1900, electric power production has approximately doubled every 10 years and is expected to double again in 1970. Unless controls are effected, this could mean an increase in "heat pollution" of more than 100 percent in the next 10 years. This does not even take into account the increase in water temperatures that will accompany the increase in impoundments for hydropower, irrigation, navigation, flood control, and water-supply purposes.

In areas of population and industrial concentration, such an increase in "heat pollution" in lakes and streams could have a profound effect on the ability of the waters to assimilate even well-treated wastes, or to serve increasing demands for recreational and fishing opportunities.

The following example illustrates the potential of heat as a pollutant. In the Illinois River near Chicago, the effect of thermal pollution from steam-electric plants is reported to be equivalent to doubling the organic waste load from the Chicago area, that is, from the present "population equivalent" of more than 1 million to more than 2 million.

Evaluating the pollutional effects of wastes

With increasing frequency, control agencies are faced with water-pollution problems that involve new types of wastes whose impact on water uses and on human health cannot now be fully evaluated. Toxicological and epidemiological studies are essential to assessment of the public health importance of new wastes, and a protocol of effective research must be established.

Predicting toxic effect of a waste on aquatic life.—Data on which to base the environmental requirements of aquatic life are needed and must be developed through research. These requirements, which include such items as temperature, dissolved oxygen, carbon dioxide, and pH, should be based on scientific fact so that reliable criteria can be developed for managing water quality to restore and maintain a suitable aquatic environment. These criteria may also prove valuable in managing water quality for other uses.

Predicting impairment of water treatment processes by a waste.—A waste may impair water treatment processes by retarding flocculation, increasing chlorine demand, or through other effects. Reliable predictive methodology for such effects should be developed to guide water purification practices.

Predicting effect of a waste on palatability.—Objectionable taste and odor of drinking water is the most common manifestation of industrial pollution which is difficult to identify and trace. Development of effective methods for predicting a waste's taste and odor potential, and for identifying and tracing the substance responsible is needed.

Epidemiological studies.—Current methods of disease reporting seem to indicate that waterborne infection is infrequent and not a major route of disease dissemination; yet there remain troublesome endemic occurrences of diarrheal diseases, infectious hepatitis, and poliomyelitis not explained by "contact" spread. More refined techniques must be developed to reveal the less obvious cause and effect relationships.

Few systematic appraisals of the health effects of pollutants have been made other than traditional investigations of infectious diseases. We need to know much more of the effects of mineral salts, organic compounds, domestic and industrial waste components, as well as the etiological agents of infectious disease; also, we need to know the effects of deficient trace elements, molybdenum, selenium, vanadium, nickel, zinc, and copper.

Evaluating toxic effect of a waste on humans.—Many of the waste substances now entering water supplies are known to be toxic in sufficient concentrations, but there are many others of unknown toxicity. Detailed studies of the toxicologic effects of individual chemicals and mixtures of chemicals are time consuming and costly, and it is hazardous to predict toxicity potentials of mixtures on the basis of individual components, especially if they vary in specific biological, physical, and chemical properties. Increased attention must be directed to the development of rapid screening tests for waste materials which may carry toxicity hazards in the area of water supply. The fundamental studies in toxicology and the related sciences required by the development of such tests can probably be best conducted in concert with other programs having similar interests and competency.

Treatment of wastes

The important need for the development of new methods for treating wastes more effectively and cheaply is not being adequately met. Also, since conventional treatment methods remove only 40–60 percent of pollutants in wastes, there is a real need to develop entirely new processes which will approach actual purification. This is becoming a particular requirement for large cities and in areas of population and industrial concentration where treated effluents are too great a burden on receiving streams, and where the same water must be used several times to meet needs.

Improvement of biological systems of waste treatment.—Improvement of methods for selecting and rapidly adapting micro-organisms to metabolize new organic compounds will increase the effectiveness of present biological treatment systems. Whether organisms can metabolize a given compound or not will provide regulatory bodies and industry with information to determine whether a waste is acceptable in a waste treatment system and the receiving water.

Treatment of wastes in stabilization ponds.—The waste stabilization pond is a recent important low-cost treatment development. Pond design presently is on an empirical basis and understanding of the natural factors (solar energy, respiration, wind, etc.) involved in the stabilization processes is too fragmentary to properly evaluate their effect on design criteria. Additional knowledge is needed on effects of hydraulic loading and of waste character on pond efficiencies in removing pathogenic organisms.

The application of physical-chemical principles to separation of soluble solids.—In the face of a naturally fixed water supply, the growing needs of expanding population and industry are requiring that a given water supply be used more and more intensively. Eventually reuse will become an accepted and necessary practice in most densely populated areas. The development of satisfactory waste treatment techniques which will provide for repeated reuse of the receiving stream represents a major, challenging research problem.

Because present methods of waste treatment, stream sanitation, and water purification cannot remove many of the new pollutants and only a fraction of the older ones, a major research program has been undertaken to evaluate physical-chemical principles applicable to much more complete removal of contaminants from water. Some of the research areas of interest are: Adsorption, extraction, foam fractionation, freezing, ion exchange, oxidation, and various membrane processes. The major question will revolve about the eventual economic feasibility of such operations. Participation in this program by universities, research institutions, and industry is highly desirable.

Disposal of waste effluents

In disposal of waste effluents, the receiving water is seldom used effectively for maximum dilution. This raises pertinent questions regarding the adequacy of outfall design techniques. Effective techniques need to be developed to assure optimum use of all available receiving water, whether this be in a stream, the Great Lakes, or coastal marine waters.

The discharge into topsoil of the liquid wastes from millions of homes and many industrial plants represents a potential and often actual, nuisance and public health hazard. Discharging liquid industrial and radioactive wastes into very deep porous strata emphasizes the need for more information on this method of final disposal.

Quality surveillance

Until recently, few programs of water quality intelligence could present a realistic picture of changing quality conditions in a stream. The minimum criteria for effective quality surveillance are clear. An acceptable program must be based on stream data that accurately reflect the stream's condition. Sampling and analytical procedures must be dependable and inexpensive.

With increasing demands for water of good quality for all water uses, the demand for dependable and economical sampling and analytical techniques becomes more acute. Even the application of our most advanced laboratory methods would presently provide only a partial picture of water quality conditions. Because of the importance of such data in water quality management programs, considerable emphasis must be given to research directed to satisfying this need.

Improvement in bacterial indices of fecal contamination.—The major research goal of sanitary microbiology is to develop simpler, more rapid, and more specific procedures for identifying contamination by human wastes. Such procedures are important in health protection and are needed where questions of important regulatory action are involved.

Recovery, identification, and evaluation of viruses.—During the last 15 years more than 70 viruses have been detected in human feces. All may be present in sewage. Viruses pass through the sewage treatment plant, persist in contaminated waters, and may penetrate the water treatment plant. Numerous outbreaks of infectious hepatitis have been traced to contaminated drinking water. The occurrence of such incidents appears to be increasing.

An assessment of the significance of water in transmitting viruses will depend on the development of improved techniques. The development of an effective method of culturing the virus of infectious hepatitis represents the single most important task for research on waterborne viruses.

Use of biota in water quality surveillance.—Changes in aquatic population reflect changes in water quality. A number of attempts have been made to employ aquatic life in water quality surveillance. No system has, however, been generally accepted as satisfactory by aquatic biologists. The potential value of employing aquatic biota in water quality surveillance should be determined by research.

Recovery and identification of chemical contaminants.—Increased production and widespread use of organic chemicals are introducing more new and highly complex chemicals into the water resource for which no methodology for detection and measurement exists.

The development of more effective methods for capturing, concentrating, identifying, and measuring organic contaminants represents an important need in water quality surveillance, and in development of controls. Improved, highly refined instrumentation for microchemical analysis must be developed for this purpose. It is clear that this will require evaluation and adaptation of the most advanced techniques of chemical separation and analysis.

Example 3

SOCIAL AND ECONOMIC ASPECTS OF ENVIRONMENTAL ENGINEERING

Environmental engineering concerns itself with the establishment and maintenance of a healthful environment, particularly in urban areas where the problems are most acute. This requires bringing together the social, biological, and physical sciences in dealing with the problems of the health and welfare aspects of man's relationship with his environment. These have been delineated by an American Public Health Association committee as follows:

1. Insuring the elements of simple survival.
2. Prevention of disease and poisoning.
3. Maintaining an environment suited to man's efficient performance.
4. Preservation of comfort and the enjoyment of living.

Environmental engineering, therefore, deals with safeguarding man's water, air, food, conveyances, structures for habitation and employment, and his recreational and work environments. It involves not only the control of the quality and quantity of basic necessities, but also, importantly, the control of the waste byproducts, whether solid, liquid, or gaseous. These byproducts, if uncontrolled or allowed to accumulate, would not only stifle existence but lead to widespread disease and physical impairment.

Increasing population and increasing concentrations of people into the urban areas of the United States have accentuated environmental problems in two important, related ways: (1) As our air, water, and land resources are fixed, increasing populations decrease the quantity of each of these basic necessities available to the individual; (2) with increasing amounts of waste products concentrated in areas with growing populations, the relative effects of these wastes on man are increasing at an ever-increasing rate. These threats are of an insidious nature, a form of creeping paralysis which, if not recognized and corrected, can lead to urban stagnation and death as surely as the most violent epidemic.

The solution of environmental engineeing problems is viewed as dependent upon a recognition of these two factors and upon finding the ways for applying, successfully, technological advances already achieved. It is of course, also dependent upon the continuing search for new ways and means of controlling the environment.

The modern practice of environmental engineering, from the public health viewpoint, consists of obtaining cooperation between numerous, contiguous municipalities and this presents complex economic and social problems. It is, therefore, at this point that the engineering and social science professions become interdependent. Each has a vital contribution to make and it is doubtful if progress can be made without an attack on the problem by these combined forces Some illustrations of these points are the following:

SOCIOECONOMIC IMPLICATIONS

Although engineers have traditionally endeavored to design the most economical as well as the most workable solution to a problem, economics in our context has a larger meaning. Involved is the need for evaluating the overall economic picture of a metropolitan complex for, say, the provision of an adequate water supply. In large metropolitan areas the provision of enlarged water supply facilities is sometimes hampered because of irrational rate structures. Solving such problems requires thorough economic studies of the water rates and instituting an equitable system overall. The importance of social factors is illustrated by the location of arterial highways without regard to social, economic, and health implications of these decisions. When this does occur, the completed road may create severe problems of neighborhood decay, inaccessibility to industrial complexes, or other undesirable "direction" of city growth.[1]

METROPOLITAN APPROACH TO PLANNING

The metropolitan factor appears strongly to be the common denominator to most environmental engineering problems. The technical literature of the past 10 years abounds with references to the recognition of this fact. There are now 210 standard metropolitan statistical areas, and the number is growing each year. Of these, 27 are interstate. Still another pertinent statistic is that 70 percent of the U.S. population lives in urban areas. The growing interest in comprehensive metropolitan health planning is well illustrated by the recent appearance of an environmental health planning guide published by the Public Health Service. Designed for use by either technical or lay people, the guide emphasizes the evaluation of health related utilities and services which readily lend themselves to long-range planning.

METROPOLITAN COOPERATION AND HEALTH

A study of an unsuccessful effort to create a county health department, and a more recent study of the social forces blocking State efforts to create countywide health departments, are examples of relevant social science research. The similar failures to secure public action on water fluoridation suggests the need for social science research into public attitudes as a basis for health action.

Most threats to environmental health cover geographic areas which are larger than the traditional political boundaries which constitute the basic State and local governmental system of this country. The problem of fragmented government is particularly acute in metropolitan areas, and it is in these areas that the problems of environmental health are most serious. Further, these health problems are no respecters of the boundaries which divide these areas into literally hundreds of semi-independent principalities. Air and water pollution, and radiation, are hardly controllable unless the attack can be made on an areawide basis. The possibility of such areawide cooperation is a field which has been extensively researched by political scientists during the last decade. Most practical advances have been made through the use of the areawide functional special district. The employment of this and other governmental innovations may well fit the need of the public health function. Different problems are being created, however, by the mushrooming of these special districts. Some central function is going to play a coordinating role; health may be the logical function for this purpose.

Closely related in subject matter would be the study of interstate cooperation in health matters. Particularly in metropolitan areas, interstate cooperation has become an essential to an effective attack upon common problems. Today air pollution and water pollution are of special interest in this connection, but these are only two aspects of the problem. Recent social and legal research has produced an accumulation of knowledge in the field of interstate cooperation and in the use and limits of the interstate compact which needs to be related to public health. What is suggested is studies of metropolitan health problems that would be comparable to those conducted in the mass transit field by the transportation center at Northwestern.

These examples are intended to indicate that the traditional areas of study in environmental health have underlying social causes to which social scientists can contribute insight.

Still another broad area of environmental engineering where social sciences play a part is that of standards formulation. In drafting criteria of performance in the environmental health field, it is important that the social factors of standards applications be carefully considered.

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[1] A pertinent discussion of social factors is appended to the report of the Subcommittee on Environmental Engineering, q.v.

After three decades of increasing interest and work in the health aspects of housing, there is still little or no information on the effects of health of room size, noise, air conditioning, lighting, and other environmental factors.

In the area of metropolitan development, health-oriented standards are either nonexistent or empirical. Attempts have been made by some zoning authorities to set criteria. For example, New York and Chicago zoning authorities have set arbitrary limits on noise and vibrations from industrial sectors, but the problem of permissible noise levels in business and residential areas is not dealth with.

The letting of health standards for urban development is complicated by the subjective nature of the problem. Modern health concepts include mental health aspects. Much of how persons or large groups of people react to noise, vibration, light, and temperature is governed by attitudes. To research this area, the combined skills of social, psychological, physical, and medical scientists will be required.

Example 4

THE PROBLEM OF FOOD CONTAMINANTS

Microbiological contaminants of foods

The notable successes of the past 50 years in controlling botulism, typhoid fever, and other severe foodborne diseases, have tended to create an impression that technical knowledge in this area is adequate to prevent all infections and intoxications of microbial origin. However, the facts are that gastroenteric episodes continue to occur at a rate second only to respiratory infections among the short-term illnesses suffered by middle-class American families. Current food sanitation practices have failed to reduce the high incidence of food-borne diseases during the past 8 years. Although the majority of outbreaks either go unrecognized by health authorities or are of undetermined etiology, a growing, body of evidence indicates that hitherto unsuspected fungi, bacteria, viruses rickettsiae, and protozoa may be partially responsible. For example, infectious hepatitis has been traced to consumption of polluted shellfish, first in Sweden, and on two more recent occasions in the United States. *Clostridium perfringens*, which has long been associated with foodborne gastroenteritis in Great Britain, is only now beginning to receive serious consideration in U.S. health departments. The first official reports of such outbreaks were received by the Public Health Service less than 2 years ago.

Well-known types of food poisoning organisms occur frequently in a variety of foods. Raw market milk supplies nearly always contain *Staphylococcus aureus*. Dried or frozen egg products are notable sources of *Salmonella* organisms. When these products are used for manufacturing purposes, they may cause serious contamination of the finished product, as happened in the case of commercially marketed hollandaise sauce. Outbreaks of *Salmanella typhimurium* were reported from Los Angeles, Calif., and St. Paul, Minn., in mid-June 1961. The hollandaise sauce withdrawn from the market was found to contain *S. typhimurium* in lots obtained in San Antonio, Tex., San Francisco, Calif., Washington, D.C., and St. Paul, Minn. The product was manufactured in New York State.

There are in excess of 600 serotypes of *Salmonella* which may cause illness in man. A sharp increase in cases in the United States due to one, *S. reading*, rarely identified among *Salmonella* isolates from human or animal infections, began in September 1956. During the 12-month period following, 325 acute sporadic cases and 3 outbreaks due to *S. reading* were reported in widely scattered States from Alaska to New York. Obviously this widespread illness, due to a specific micro-organism, does not follow patterns of water- or milk-borne outbreaks but would be applicable to a processed contaminated food product in national distribution.

An example of spread of *Salmonella* infections from contaminated egg albumin was reported in England. Widely scattered cases were traced to certain bakeries where dust from American egg-albumin powder contaminated the finished bakery products.

From the above examples it may be seen that foodborne disease-producing micro-organisms are widely distributed in foods in national and international distribution, for which no protection of the public is afforded.

Recent field studies in a metropolitan area have shown (*a*) that *Salmonellae* were present in 17 percent of the raw market poultry, and (*b*) that staphylococci were found in 21 percent of the market Cheddar cheese. Direct evidence regarding possible effects of these contaminated foods on the health of consumers is not available, but similarly contaminated products have, on other occasions, been implicated in gastroenteric outbreaks.

The foregoing examples illustrate the complexity and magnitude of the microbiological problems of food protection, which require much increased research effort by the Public Health Service, in concert with other governmental agencies and industry. Potentially useful approaches to these problems include—

1. Methodological studies to improve techniques for the quantitative detection and identification of pathogenic foodborne micro-organisms and their toxic products.
2. Bacteriological, virological, mycological, and parasitological investigations to determine the kinds, prevalence, persistence, and public health significance of potential pathogens in specific foods. For example, the production of safe shellfish depends on a thorough knowledge of the microbiological condition of estuarial growing areas, as well as commercial harvesting, shucking, and packing operations, which are subject to contamination with various toxic dinoflagellates, enteric bacteria, and viruses.
3. Veterinary public health studies on epizootic diseases of food animals, which may be transmitted to man.
4. Ecological studies on the interrelated physical, chemical, and biological factors that affect the growth and survival of pathogenic micro-organisms in food.
5. Coordinated epidemiological, clinical, and laboratory investigations of foodborne diseases to establish cause-and-effect relationships, modes of contamination and transmission, extent and severity of illness, techniques for finding and reporting natural outbreaks, and means for prevention and control.
6. Consideration of the public health significance of alterations in the microflora of foods, which may be brought about by the newer methods of processing and marketing; e.g., freeze drying of products which may be reconstituted and sold at delicatessen counters or from vending machines.
7. Field studies in the community setting on practical approaches to the control of microbiological contamination of foods.

Foreign chemicals in foods

Increasing contact between foods and foreign chemicals is unavoidable in our technologically oriented economy. Without use of agricultural chemicals, food additives, sanitizing agents, chemically treated water, and synthetic packaging materials, the United States could not feed the urban population. It has been estimated that elimination of agricultural chemicals alone would reduce farm yields by 10 to 90 percent.

There is also growing concern about the radionuclide contamination of milk and other foods by fallout from nuclear explosions, byproducts of atomic reactors, and residues of radioactive wastes. About five-sixths of strontium 90 taken into the human body is estimated to come from foods, especially diary products. Accidental release of short half-lived radionuclides, such as iodine 131, from a reactor in another country has, on at least one occasion, necessitated withholding milk from the market until the level of radioactivity declined. Extensive studies, in close cooperation with radiological health and atomic energy experts, will be necessary to understand the progression of radionuclides through the food chain and their long-term effects on man.

As is brought out in the report of the Subcommittee on Milk and Food, "there are no harmless substances; there are only harmless ways of using substances." The determination of how and when chemicals may be used safely in relation to food is already a major public health problem, and it will become even more important in the future.

Some of the avenues by which the health implications of foreign chemicals in foods may be approached are as follows:

1. Methodological studies to develop and simplify analytical procedures for both the presumptive qualitative and quantitative determination of herbicide, insecticide, rodenticide, germicide, and other potentially harmful residues in foods. There are many new tools now available which should be studied with respect to their application in this field.
2. Toxicological and pharmacological investigation of animal and human responses to repeated low-level dietary exposures, using chemicals singly or in combinations which are typical of their occurrence in food.
3. Exploration of the correlations between long-term, chronic-toxicity testing and more rapid presumptive procedures, based on reactions of enzyme systems, tissue cultures, or micro-organisms, to chemical agents.

4. Radiochemical studies on the occurrence, measurement, intake, retention, and biological effects of radionuclides from foods and other environmental sources, including dietary means of minimizing human exposure and damage.

Example 5

PROBLEMS IN OCCUPATIONAL HEALTH

Occupational health is that portion of the total health effort which is closely associated with the individual's occupation. The occupational environment presents many special risks as well as opportunities for improving health, but effective programs must be based upon adequate and simultaneous attention to both the man and his environment.

The traditional emphasis in the study of occupational disease has been on specific, dramatic, and killing diseases apparently caused by single or small groups of environmental factors. The recognition and conquest of lead poisoning, mercury poisoning, tar cancer, phosphorus poisoning, radium poisoning, and silicosis are classical stories.

Occupational health today, however, must not only continue the application of conventional methods for the detection of new toxic agents, but must also extend its traditional concept in new dimensions. The problem confronting us today contains many elements that are new, but our methods of attack have been slow to adapt to the new challenges. The health of the worker is still far from optimal, and frank occupational disease also persists. Residual or slowly developing disease or dysfunction may not be detected by conventional clinical examinations or by conventional reports of death or disease. Some occupationally induced disease can easily be confounded with "normal" causes of progressive deterioration such as aging. The involvement of each individual may be less, but many more persons are involved. It has been estimated that of the more than 70 million members of the civilian labor force, probably more than half have some degree of physiological impairment which could be greatly reduced if adequate knowledge were available.

There is increasing evidence that impairments now being encountered are not produced by single, isolatable, and easily incriminated factors; rather that many are the result of multiple factors working together, each adding it own insult and helping others to add theirs. Only tentative beginnings have been made to answering such questions as the effects of high atmospheric pressures or thermal stress on the tolerable limits of toxic chemicals. Attempted solutions of some problems lead to new questions. For example, we may point to the paradox that has developed in the South African mines—dust, as it was known, has been largely suppressed and with it has disappeared the gross silicosis of old, but pneumoconiosis remains and resultant deterioration of pulmonary and cardiac functions continues. This pneumoconiosis may at times even show a negative correlation with the environmental dust count as conventionally estimated. Again, with the decrease in heavy physical labor and the introduction of automation, the incidence of physical strain in industry can be expected to decrease, but the psychological stresses are obviously increasing at least in proportion and probably absolutely as well. For example, the problem of handling and interpreting masses of incoming information under pressure, in split-second fashion and often with very critical consequences, so dramatically seen in airport control rooms, is developing with increasing frequency in communication centers across the Nation, in plant control room and in emergency installations. In less intensive fashion the psychological and social concomitants of the job affect every worker, his relations with others, his productivity, his anxieties, and his health.

Recognition of the interrelationship of various environmental factors has perhaps been most evident in the heightened awareness of the effects of the growing chemical world surrounding us and of the consequences of exposures to radiation and other agents of technologic prowess. There is a widening gap between the new materials being created and an understanding of their effects on living systems. It should become axiomatic that these materials must be as well understood for their biological potentialities as well as for their physical and mechanical properties. It is in the in-plant environment where many of the toxic pollutants now threatening the air and water of communities throughout the Nation are first spawned. The industrial worker is first exposed to the chemicals that find their way into home use. Industry is the incubator for problems of more far-reaching consequences, and alert, scientifically sound, and unbiased investigations of occupational health problems can provide bases for later communitywide investigations. Also, without adequate knowledge and coordination of activities the elimination of a contaminant from a plant may well result in a community air- or water-pollution problem.

Over one-half of the industrial plants in this country lack basic industrial hygiene control measures. The most serious deficiency is in the provision of adequate preventive measures for workers in the small plants of less than 500 employees, which accounts for over two-thirds of the work force.

In several States the provision for the control of occupational environments is below the level considered adequate. Of the 584 persons employed full or part time in occupational health in State and local units in February 1961, 58 percent were in 6 States; the remaining States had either no programs or inadequate ones. Already serious, the manpower shortage in occupational health is expected to worsen.

Great benefits have come from advances in science and technology and from their application by our industries. These have not been gained, however, without certain costs in terms of human values. If we are to enjoy to the fullest extent the benefits from our modern industrial society, these costs have to be better recognized, evaluated, and reduced. The national effort in occupational health must be directed to this end. Accordingly, an occupational health program must have as its basic objectives:

1. Recognition of the influences and risks associated with occupations;
2. Evaluation of their effect upon human health and efficiency;
3. Development of preventive measures; and
4. Effective application of the knowledge so gained to industrial practice.

TOXIC SUBSTANCES USED IN INDUSTRY

Mr. FOGARTY. What about toxic substances used in industry?

Dr. ANDERSON. Here is a problem, again, that is getting some attention from industry, particularly the larger industries of the country that are able to examine the chemicals and substances that they use in their processes and research from two points of view.

One point of view that is important, of course, is that of the protection of the workers in their own environment.

The other point of view is that of the effect of these substances upon the consumer. This sort of research is not going on at a level which I would regard as being sufficient, necessarily, to cover the problem today. It would be our intent, in developing our toxicological program, to try to work in such a way that the industrial effort and the governmental effort, scientifically, could contribute information each to the other. Thus industry's problems of toxicological substances in their industrial processes would be minimized, and also, the consumer would be protected.

Mr. FOGARTY. These are all general questions, because the more specific ones will be reserved, as you said, for the separate categories as we go along.

It seems to me that a reasonable program would be that we go forward with the Center, but in the meantime, consideration must be given to working with the Department of the Interior, Agriculture, Food and Drug Administration, to initiate a broad grant and contract program, and may be we should be considering facilities for university-based laboratories in this area, for fundamental research, and also practical and applied research.

Do you have any comment on those suggestions?

RESEARCH GRANTS TO UNIVERSITIES

Dr. ANDERSON. Yes; and there is interest in universities in developing their programs, to bear upon some of these problems that I have mentioned. The purpose of the appropriation here for research grants would be to help stimulate the development of such university centers.

We have had interest expressed by the University of Missouri, the University of Minnesota, the University of California, Massachusetts Institute of Technology, and several others.

Dr. TERRY. Michigan.

Dr. ANDERSON. Yes, Michigan, in which they have proposed to start some work of their own in the area of research and training of people to work in these environmental toxicological and epidemiological problems.

RESEARCH PROGRAM UNTIL ENVIRONMENTAL HEALTH CENTER IS BUILT

Mr. FOGARTY. I was thinking about the establishment of some sort of university-connected laboratories in toxicology, that would perhaps take up some of the slack between now and 6 years from now when the Center is ready to go into operation.

I am just afraid that this problem is so big and so far ahead of us, that this start which you are making is just too small to catch up or to keep even, because the problem is growing all of the time.

Dr. TERRY. Mr. Fogarty, I think that very realistically, we are not only supporting some work already of some of the universities but we plan to develop it, as Dr. Anderson was pointing out, through our grant mechanism. I think rather than trying to go out and set up one big toxicological institute, in connection with one university, that we will probably do much better in supporting scientists in many universities, who are interested in and willing to work in this area because I think we can get much more good work; get it done much faster in that way. But one of our real problems is going to be having a basic focal point for all of this work, in pulling together, not only the things that we are doing, but others are doing as well as the university.

LARGER PROGRAM NEEDED

Mr. FOGARTY. But you are not going to do it with this small budget that you have for 1964.

Dr. TERRY. No, sir. We don't pretend we are going to do it, but this is what I consider a good beginning in this direction, Mr. Chairman.

Mr. FOGARTY. Are you prepared for the problem?

Dr. TERRY. Well, you have to start somewhere and I think this is a reasonable beginning.

Mr. FOGARTY. Well, I don't like to discourage you, but I certainly disagree with you. This budget is just peanuts in comparison with the problems that we already have, to say nothing of what is ahead of us. I think we ought to be doing 10 times more than we are doing. It is that important. That is my own opinion.

Dr. ANDERSON. This $1,630,000 which appears for the first time in this request, is to get a start. The Gross report suggested that in this field we enlarge upon the schools of pharmacology in the universities, to get more interest in those schools on toxicology than solely upon pharmacology. We do have a resource to build upon in several universities around the country and the recommendation was—and you seem to agree with us—that we try to build upon what we have to start with, in several places.

Mr. Fogarty. But the Public Health Service has made grants in these areas before have they not?

Dr. Anderson. Yes, we have. There have been some grants made prior to this year in allied fields, yes.

TYPES OF GRANTS

Mr. Fogarty. Will these grants have any significantly different basic features from other grants of the Public Health Service? That is, will they be the usual type of project grants to schools and other nonprofit institutions?

Dr. Anderson. There will be project grants, and then, as we envision the research grants program here, we would hope that what would develop would be toxicologic environmental health programs in universities, in which several of the university departments might be involved.

For example one point in the university that can be developed is the school of pharmacology which frequently is in the medical school.

Another point would be in the animal husbandry and veterinary medical school; another point in which interest might be developed, would be the physiology department over the chemistry department in other words, wherever you can get an input into toxicological endeavor. Some of the interest that we are getting from universities is such that the university would like to use and develop a program in which the program actually would be interdepartmental, and interdisciplinary, and involving talents from many schools, looking at this problem from a slightly different point of view.

We think this is a much-needed thing.

GRANT APPROVAL PROCEDURES

Mr. Fogarty. What will be the approval procedure for these grants?

Dr. Anderson. When a grant would be received it would go to the central Public Health Service receiving point in the Division of Research Grants; if it were pertinent to the field of environmental health, it would be referred to the Environmental Health Grants Management Staff. It would go to a study section which would be one of the study sections which are used by all parts of the Public Health Service for review of the proposal from the standpoint of scientific merits. Then, after it had received a rating, a priority rating, on the basis of scientific merit from the study section, it would then go to an appropriate council. Currently, they go to the National Advisory Health Council.

Mr. Fogarty. I notice they are expected to average about $80,000. This is a little more than the other categorical divisions. Why is it?

Dr. Anderson. This is because the interest of several departments, and the disciplines of several departments come to bear upon many of these problems.

TRAINING GRANTS

Mr. FOGARTY. There is practically no increase in this budget for training. Are you satisfied to stay on the current level of training?

Dr. ANDERSON. This is the first year that this environmental health training grants program has been identified separately, and our current level of research training grants is such that it will take up the full appropriation, so there is no provision for any expanded activity in the research training field here.

Mr. FOGARTY. Are you satisfied?

Dr. ANDERSON. I think that this is an area that needs stepping up.

Mr. FOGARTY. How does this budget then, compare with the recommendations of the Gross committee in the area of training?

Dr. ANDERSON. Well, the Gross committee did not, as I recall, give us year-by-year steps with regard to the effort that might be devoted to a specific area.

Mr. FOGARTY. What did it recommend?

Dr. ANDERSON. The Gross committee felt that training is an extremely important function and that by the year 1970, approximately $25 million should go to the area of training.

Mr. FOGARTY. Do you think we are ever going to get there at the rate we are going in 1964?

Dr. ANDERSON. Well, in this regard, I would not say that the $25 million that I cited——

Mr. FOGARTY. I am asking for your personal views from a professional standpoint. You don't have to worry about budget policies when we ask you a direct question like that.

Dr. ANDERSON. It is not that, but we have to consider this training item in relation to the training items that are included in some of the categorical programs, to compare it to the $25 million in the Gross committee report. I don't have any figure in mind as to what it would be.

Mr. FOGARTY. Well, supply it for the record, please.

(The information follows:)

The Gross committee recommended that "Funds in excess of $25 million are urgently needed to place these (training grant) programs in full operation." The 1964 budgets for environmental health programs include $7,469,000 for training grants and fellowships.

NEED FOR RESEARCH IN SOLID WASTE DISPOSAL

Mr. FOGARTY. I received this telegram:

> The American Public Works Association once again brings to your attention the need for expanded research and technical assistance in the field of solid waste disposal. Notable progress has been made in handling liquid and gaseous waste problems because of the foresight of Congress in providing Federal support for research and technical assistance in these fields. Virtually every individual would benefit from improved methods of storing, collection, and disposing of solid wastes. Such activity is estimated to cost the American people upwards of $3 billion per year. Sincerely hope that adequate funds are made available to enable the Public Health Service to meet its responsibilities in this important, but highly neglected field of activity.
>
> ROBERT D. BUGHER,
> *Executive Director, American Public Works Association.*

I assume you support this view.

Dr. ANDERSON. Yes, this is a multi-billion dollar problem, as far as the cities of the country are concerned, from the standpoint of dollar expenditure, and it is becoming an almost unmanageable problem as we use up more and more of the land that we can use for sanitary land fills. There is a problem here of incineration contributing to air pollution problems; if you solve the problem by dumping it into the water or stream, you have a water pollution problem. So there is a real problem here, facing the country in this field.

Mr. FOGARTY. Mr. Lesinski.

DUTIES OF FOOD AND DRUG ADMINISTRATION

Mr. LESINSKI. Doctor, I like more and more what your purpose is but what I am still worried about is, as to whether it should be in Food and Drug, because they are handling, actually, the basic investigation as to the chemicals or food, and so forth. It would seem that they would be the proper agency to handle this.

Dr. ANDERSON. Well, certainly they have the responsibility for controlling these susbtances that are found in foods, drugs, cosmetics, and hazardous substances that are used in the household, with regard to labeling.

From the standpoint of a health agency, I think it would be an error if we removed from the thinking of health people the possibility that exposures to people could occur through these many ways.

For example, while Food and Drug is concerned about foods, and what they contain, there are these other ways of exposure, Mr. Lesinski, which add to the effect and, as far as you or I are concerned, it makes little difference to us if we get poisoned whether the poison came to us from a food, or air, or water, or from our working environment or from our house. The important thing is that we may have gotten exposures from all of these ways, and what we are concerned about is the total amount of poison that we take in, rather than what came through one of these ways.

Mr. LESINSKI. I brought it up because I believe the Food and Drug regulations require pretesting on all new medicines that are coming out. Even so, there are places where there are mistakes made.

TOLERANCE OF BODY TO TOXIC SUBSTANCES

In other words, what you are primarily concerned about is the body has a lot of tolerance; the body can take an awful lot of abuse.

For example, Dr. Terry and I were discussing the various chemicals that are put into water, and so forth. Now, true, it is a poison, but now, how long can the body tolerate that poison, is what is of concern to me.

Salt is a poison, but salt has been used for thousands of years by people. Now, some theorists claim that the human being came from the sea, and that is why our blood is of the same salinity as salt water is. Now, I don't know, but I know this much: with artificial fertilization that after 5 or more years, seeds will not germinate. What is causing this?

Also, if earth is fertilized with artificial fertilizer, it tends to sterilize soil. Now, the important thing, I believe, we are going to have to get to here, if I understand you now, is, in spite of the fact that we take a little poison here and a little poison there, the collective amount of poisons, together, in a lump sum, How does it affect your body? Is that it?

Dr. Anderson. Yes, we are concerned about the attitudes and effects of substances taken into the body; their cummulative effects when taken in over a long period of time, and not only their effects with regard to, let's say, to death, but also the body's ability to function.

ADAPTABILITY OF HUMAN BODY

You talked about the adaptability—the adaptive power of the body. Well, this is so. The body can adapt, particularly over short periods of time, to stresses and strains but when these insults occur over a long period of time, there may be damages that occur. This is one of the things that interests us very much about this tissue cell project that I mentioned. In this—let's call it a machine—that this scientist has in mind to build, where he can, using very sensitive devices, keep track of the fluid changes, the salts and enzymes and hormones and poisonous waste products that are given off, where he can actually remove them and insert new nutrients into the media, and at the same time, there he can also add an insult—let's say a chemical or radiation—and watch to see how this affects the cell's ability to grow and reproduce, how it affects the genetic composition of the cell. These will give us clues which we then can watch for in the intact body; we will have early information that we do not have now when we study the intact animal, because the results are masked by these adaptive defense mechanisms that the body has.

Mr. Lesinski. When sulfa drugs first came about, there was a great to-do about it. All of a sudden, they found it was wrecking the livers of people.

I have had experience—you talk about fumes in the air; insecticides and so forth. My son, 5 years of age, swallowed gasoline.

Dr. Anderson. Swallowed?

Mr. Lesinski. Yes, swallowed gasoline. We called the fire department; and I got a doctor and the doctor said, "Rush him to a hospital." Then they pumped his stomach; then they gave him mineral oil.

Now, their explanation to me was that the blood takes the gasoline from the stomach into the lungs. It burns up the lungs, the same as if you have TB.

DANGER OF INSECTICIDE SPRAYS

Now, insecticides as sprays have kerosene as a base, correct? Or coal oil. Would that not affect your lungs by breathing in, inhaling insecticides used in spraying?

Mr. Anderson. Possibly so. Any person who is exposed to any real concentration of sprays, such as the applicators, usually wears a mask, a filtering device, so it would be an accidental type of situation for him.

Mr. Lesinski. I appreciate that, but the average home user doesn't do that.

Dr. Anderson. And when he doesn't, he gets into trouble.

Mr. Lesinski. He would.

Dr. Anderson. He can get into trouble if he is working, for example, in an enclosed space. There, however, the trouble he usually gets into is an immediate problem; namely, he experiences the acute toxic effect of the insecticide. This is what happens at home.

EFFECTS OF GASOLINE POISONING

Dr. Terry. May I just say a word here.

For instance, in your example, Mr. Lesinski, of the kerosene poisoning or the gasoline poisoning, as the substance gets into the blood and comes to the lungs, it then vaporizes and it hits a fairly high concentration in the cell's lining of the small air sacks in the lung. To those cells, it is very much as if you got some gasoline in your eye. It irritates the cells. They weep. So that persons who die of gasoline or kerosene poisoning, or poisoning of that sort, usually die of what we call pulmonary edema. These cells weep. Fluid is thrown out into the lung tissue and into the bronchi; and in effect a child like that would drown in his own secretion. This is the acute effect. We know this very well, and we know many ways of avoiding it such as those that were used.

We don't know, however, if the body is subjected to repeated, small insults like this, not enough to produce even a cough, what the long-term effects are with many of these chemical substances, and this is one of the basic things that we are trying to get at.

Mr. Lesinski. I understand that. Also, my father-in-law when he was perfectly healthy, bought a gas station; then within a few years by sniffing in the gas tank every time he loaded these cars up, he got cancer of the lungs.

Now, this is all important, and I recognize the fact.

For instance, I will give you another example of what I am driving at.

RETURNING ORGANIC WASTES TO THE SOIL

I am quite interested in organic gardening. I have had a lot of correspondence with various people, in checking with England and the United States, with the agricultural departments. I find the Agriculture Department has done a lot of work on this for many years. Nobody knows about it.

You mentioned your garbage trouble. In Boston, they built a great big island out in the harbor with wastes. Your costs of disposing of city wastes is mounting, and we, for the last hundred years, have destroyed our topsoil in this country. Where did it all go? Down the sewer, out into the lake or into the sea. We have to find a way—we have found a way—we have to implement that way in the protection of this waste; putting it back into the soil, because if we don't, America, in 20 years, is going to be short of food.

Now, the thing you have got to recognize is crops cannot grow without this waste. Oh, they can. You can produce crops with chemicals, but this is something that you are getting into.

What results does that food have on the health? Am I correct on that?

Dr. Anderson. That is correct.

Mr. Lesinski. In other words, the possible toxic effects of food that is grown on chemical fertilizers. Is that true?

Dr. Anderson. This would be one of our concerns, the substances that are used in food production, food processing, and distribution techniques. These are some of the ways in which exposures can occur as far as man is concerned.

I think—going back to your solid waste disposal example—it illustrates that if it is possible for us to work out control or methods of management of some of these problems which will contribute to other aspects of the economy, it is going to be easier for us to solve some of the health problems here, of keeping our environment uncontaminated and unpolluted. This composting has been one of the things that has interested Mr. Gilbertson, who will appear on the "Milk, food, interstate, and community sanitation" appropriation item later on. This, I think, has been one of the obstacles currently to the use of the composting technique, namely, that the economic advantage of this system of disposal is not yet apparent to people, and research needs to be done to improve the economic aspects of this system of disposal so that it will become readily incorporated into our daily living. To us, this illustration is a good one, because it illustrates the applied kind of research that the specific control division will perforce have to devote their attention to.

However, there may be some basic bacteriology or basic chemistry which would relate to the breakdown of substances in such a way that the nutritive value of this compost might be changed. This would come out of basic research, and then be aided by the applied research that would be done with regard to developing a field system for the handling of compost.

Mr. Gilbertson can talk to you about this much more authoritatively than I can.

DIRECTION OF RESEARCH

Mr. Lesinski. In other words, what you are doing, you are going about this in reverse.

Now, wait a minute. Wait, Dr. Terry. You are going about this in reverse. Instead of finding new ways to correct something, you are finding out what damage might be done by these new methods. Is that true?

Dr. Anderson. It is a two-way street, really, Mr. Lesinski. In part we want to anticipate the damages that might be done by new processes and techniques, as they are introduced, so that we can modify the processes and techniques in such a way that the damage will not occur.

Now, on the other hand, there are things that get out into field usage, and despite all of the advanced thinking that has gone on in the development of the products that are used in the field, you discover that, under field circumstances, operational difficulties are occurring, let's say damage to people or damage to their welfare.

When such a problem is discovered it is fed back through the research line and you may end up having to get way back to basic research in order to develop a new principle which can then be incorporated and fed back down the line to the field situation.

This is the flow we see in our research endeavors.

Mr. Lesinski. Yes, but what I said is the fact that, whereas research is finding new ways all the time, you are researching in reverse, to find out what the aftereffects are and what research at the other end is doing about it.

INTERDEPARTMENTAL COOPERATION

What duplication, if any, will that have on other agencies, like AEC and Food and Drug and so on?

Dr. ANDERSON. Well, hopefully, one of our purposes here, in having people here at the headquarters of the Environmental Health Center in the Washington area in the research area would be to have them work with the research directors in Food and Drug, in AEC and in other governmental agencies, in identifying the problems that exist, as they pertain to public health, because this is our interest; and also to work out a program which will solve these problems or will contribute to the solution of these problems.

Now, sometimes this may mean an effort by the Department of Agriculture. Sometimes, it might mean an effort by the AEC, which, maybe, is more appropriate for them to do because they have a facility that could be used, or because they are doing some work which would pertain to them for their own purposes, not necessarily from the health standpoint. In those instances, we would work out understandings with regard to what they did and what we did, and how we would exchange information back and forth so that duplication would not be present; and yet, serve all our purposes of research. We are doing this in an initial sort of way, right now, in many of these fields. One of the areas is radiological health where we have a committee composed of representatives from the Atomic Energy Commission and from the PHS Division of Radiological Health. They review programs as they are planned by both agencies to see how they can better be coordinated and duplication reduced.

We do this in some of the other areas too. It is a way of operation that we think is extremely important and we want to heighten it. This is why we are proposing some of these items in the budget. This is why we feel the environmental health center should be in Washington.

Mr. LESINSKI. Am I correct in saying this, in a few words, you are attempting to get a better collection of information from all agencies in your agency?

Dr. ANDERSON. As it pertains to health; yes, sir.

Mr. LESINSKI. That is No. 1; No. 2, you are getting at the basis of what effects our modern methods have upon man.

Dr. ANDERSON. Yes, sir.

Mr. LESINSKI. Now, at that point, Mr. Chairman, you said we are about 20 or 30 years behind in this type of studies. It was done a long time ago.

Off the record.

(Discussion off the record.)

CUMULATIVE EFFECTS OF FOOD ADDITIVES

Mr. LESINSKI. Dr. Anderson, are you also checking into the additives?

For instance, meat preservants. There is an additive put on there that makes it look fresh when it is old. Today it is supposed to retard—well, there is an additive they use on oranges, coloring. There are other additives they put on fresh vegetables.

Mr. FOGARTY. Popcorn.

Mr. LESINSKI. Popcorn. Yes.

Mr. FOGARTY. I meant the coloring.

Mr. LESINSKI. These have been approved by Food and Drug, but in the long run, what effect do they have on the human bodies; are you checking those out?

Dr. ANDERSON. I don't believe we are at the present, sir. This is an area where we are just getting started.

Mr. KELLY. Well, the Food and Drug Administration has the responsibility for establishing a tolerance. They will not approve them unless that have done an adequate amount of research to determine that the levels which they authorize to be used do not have an adverse effect.

Mr. LESINSKI. I understand that. But again, as Dr. Anderson was saying, collectively, all these poisons, are they having a bad effect upon the body?

That is the point I was driving at.

Dr. ANDERSON. This is the question that we are addressing ourselves to in advancing the appropriation request that we have here.

Mr. LESINSKI. I see.

Dr. ANDERSON. Currently, we do not have this synthesis, integrating capacity.

Mr. LESINSKI. I do not know what the figure is, but I will say there are many, many hundreds, maybe thousands of various additives in our foods today that are being used, and we have safe tolerances, yes. There is no harm in them separately. But collectively are they having harmful effects on the human body? I do not know.

Dr. ANDERSON. In some of the universities with which we have had conversations, there is increasing interest in this problem. They are developing programs which may come up for support from our research grants item here. Massachusetts Institute of Technology is one. University of California, at Davis, Calif., is another one, where they is specific interest in this food technology area; University of Wisconsin is a third one where there is interest in this area.

COMPOSTING SOLID WASTES

Mr. LESINSKI. Getting back to one subject we discussed here before, compost. In Europe, I think it is in Holland, or Belgium, Holland, they are going back into putting compost in the soil, for fertilizer. They have found out the food is better, it is healthier and everything else by using natural means.

The old system of farming was they would rotate every 3 years, grow a crop every 3 years, let acreage lie dormant for 2 years. In America, we speed everything up at the cost of our health.

Dr. ANDERSON. Mr. Gilbertson has, on his staff, a Mr. John Wylie, who is one of the early workers in this composting for solid wastes here in the United States. Maybe when he comes before you, you would care to discuss this further with him.

Mr. LESINSKI. Well, I do not know—off the record, Mr. Chairman.

(Discussion off the record.)

Mr. LESINSKI. I thank you, Dr. Anderson. That is all, Mr. Chairman.

TRANSFER OF ACTIVITIES FROM OTHER APPROPRIATIONS

Mr. DENTON. Doctor, this is a new agency to which has been transferred funds for work that was partly performed by the General Research and Services of the National Institutes of Health and also for functions that were formerly performed by the milk, food, interstate and community sanitation; is that right?

Dr. ANDERSON. Yes, sir, some of these were.

Mr. DENTON. Now, the work that was formerly done by General Research and Services, National Institutes of Health, was very largely the Arctic health research program, was it not?

Dr. ANDERSON. No, the milk, food, interstate, and community sanitation program was where the Arctic Health Research Center was carried as a subheading.

Mr. DENTON. Arctic health came under that?

Dr. ANDERSON. Yes, sir, that was carried in that appropriation in previous years.

Mr. DENTON. I see. And the services that were performed by the other agencies, General Research and Services, National Institutes of Health?

Dr. ANDERSON. That was the research grants and training that bore upon environmental health which the committee instructed us to break out and identify with the purposes for which the grants were made.

ARCTIC HEALTH RESEARCH CENTER

Mr. DENTON. Did your mild winter in Alaska cause you any trouble?

Dr. COLYAR. No trouble, except we had complaints about mosquitoes.

Mr. DENTON. Now, you have 65 employees in the Arctic Health Research Center.

Just what kind of duties do they perform? What work do they do?

Dr. ANDERSON. May I ask Dr. Colyar?

Mr. DENTON. Yes.

Dr. COLYAR. In the Arctic Health Research Center, we have six study sections. In other words, all these people fit into these six study sections. And among these are environmental sanitation, which is engineering.

The environmental sanitation section has to do with the development of methods of waste disposal, for example. One, in particular, that we have been working with for 2 or 3 years and now have developed to a point where it looks like it is a very practical method, is the use of sewage fermentation in Alaska.

Now, this is a very common method of course, economical method, used throughout the United States, but we found that it also functions very efficiently even as far north as the Arctic Circle. So we are at the point now where the military services have agreed to utilize this type of waste disposal for some of their remote sites.

DEVELOPMENT OF ARCTIC WATER SUPPLIES

Other things which we do have to do with the development of water supplies. We have, I think, two principal problems in connection with water supplies.

One is the winter supply of water, where—in the Far North where all surface water is frozen and where permafrost makes it very difficult to develop ground sources of water.

Now, our present effort is to develop reservoirs for storage of water through a winter season in the liquid state. And to do this we are trying to develop both earthen reservoirs and tank reservoirs of wood at the moment, and to utilize waste heat to prevent freezing; insulation of container to prevent freezing.

The other problem of water supply has to do with the development of ground sources in permafrost areas. And where permafrost extends from a few feet to a thousand feet beneath the surface, this is sometimes very difficult and impossible.

Water can be obtained from so-called lenses, or streams running through permafrost, if you are fortunate enough to find one of those you might locate water, say 100 feet, 200 feet below the surface, within permafrost.

The best sources and most reliable and ample sources of ground water in permafrost areas come from beneath the permafrost line.

Often these wells have to be 300, 500 feet deep, and are rather expensive. And as a rule they can only be developed by institutions or Government agencies who can afford it.

EXPERIMENTAL HOUSE

Another project which that particular section has been working on is trying to develop a house using local materials as economically as possible, adaptable to your remote areas for people who need housing and cannot afford to spend $25,000 or $30,000 which it takes to buy a bungalow.

Recently the Public Housing Administration has become interested in this problem and together with the Alaska Housing Authority, with whom we are working, too——

Mr. Denton. I would think it would be their problem more than yours.

Dr. Colyar. Well, I think it is now recognized we never started out to develop a housing program. Our purpose was to develop a prototype of a house adapted to arctic conditions.

And our concern was primarily not with construction as such but with ventilating methods, lighting, with design of the house giving enough room so that you could at least have adequate or separate sleeping quarters; the bringing of water into the house in storage tanks, providing sinks for inside use of water and disposal of water. So these have been our main concerns, and not housing perhaps as such.

LOCATION AND DUTIES OF PERSONNEL AT ARCTIC HEALTH CENTER

Mr. Denton. These 65 men that you have, could you just give me a general breakdown of who they are?

Are they public health officers?

Are they technicians?

Are they clerks or just who are they?

Dr. Colyar. Well, among the 65, we have 18, I think it is 18 or 20, who are doctorate, who are doctors in their fields; or who are masters, master's degrees.

In other words, they are professional people, investigators.

The others, technical and service people—that is, laboratory technicians, animal caretakers, those who give technical assistance—are about 30, and the remainder are clerical, messenger.

Mr. DENTON. You are familiar with the activities of the Indian Health Service in Alaska?

Dr. COLYAR. Oh, yes.

Mr. DENTON. You are a separate agency from them; you do not work together?

Dr. COLYAR. We are a separate agency, but we do work together, that is, cooperate.

Mr. DENTON. Yes.

Dr. COLYAR. We do a number of projects for them. We have two or three now underway.

Mr. DENTON. Of course, they perform entirely separate functions from what you do.

Dr. COLYAR. Their primary responsibility, of course, is medical care, whereas ours is simply investigative.

Mr. DENTON. I would think you would be located nearer the center of population, where they would be further away from the center of population than you are.

Dr. COLYAR. Well, we are in Anchorage. The original plan for our Center, of course, was to place it in Fairbanks.

Mr. DENTON. Yes, I would think so.

Dr. COLYAR. On the campus of the University of Alaska. As a matter of fact the State at that time offered the Public Health Service about 40 acres, I think, if they would build a center there.

But we were unable to get appropriations for a center construction at that time, nor could we then find buildings or quarters of any kind to work in. So for that reason we went to Anchorage and rented space and we are still there.

Mr. DENTON. These 65 are all in Alaska?

Dr. COLYAR. They are located in Alaska. That is right.

Mr. DENTON. Yes.

Dr. COLYAR. On your point there, Mr. Denton, the "Buildings and facilities" item does have money in it for the planning of a permanent Government-owned building on a site which now has been given to the Department for the Arctic Health Research Center and the Alaska Water Laboratory. So, again, we are going to develop our field activities in relationship to the University of Alaska, as we see it up there now.

ADDITIONAL WASHINGTON PERSONNEL

Mr. DENTON. Now you have, or you are asking for 13 additional employees? Three to administer grants and the other 10 to do research?

Dr. ANDERSON. Yes, sir.

Mr. DENTON. Will they do the research here in Washington?

Dr. ANDERSON. Yes, sir. The 10 that are doing research will be doing research here in Washington as we solve space problems for them.

Mr. DENTON. Where do you have your office for this work?

Dr. ANDERSON. Currently we do not have this work. This is a new activity as far as we are concerned.

Mr. DENTON. Yes.

Dr. ANDERSON. And the place where the activity would go on would depend upon the type. For example, there are two positions here that are for mathematicians who would be expert in systems analysis, operations research, and epidemiological study planning. They would be housed in office-type space. The other eight, or a substantial portion of the other eight may be on this tissue cell culture project I mentioned and would require laboratory space, and exactly where we would find lab space at this moment I cannot tell you.

BUDGET REQUEST

Mr. DENTON. Now your principal increase is (1) $1,670,000 for research grants, and (2) for intramural research, I guess you would call it, and that is $330,000. That includes $60,000 for reviewing grants?

Dr. ANDERSON. Yes, sir.

Mr. DENTON. That is correct, isn't it?

Dr. ANDERSON. Yes, sir.

Mr. DENTON. I assume your agency will do any kind of investigation concerning environmental health that is not covered by a categorical agency, but it is something that should be done; you gave pesticides as an example of that.

Dr. ANDERSON. Yes.

SUBSTANCE TOXIC TO FISH LIFE

Mr. DENTON. I am on another committee where that has been a problem, too, and that is Fish and Wildlife—you spoke about that. But that had been a big problem because the pesticide destroyed fish and the Izaak Walton League and conservation clubs, and all of those groups, are very interested in that.

We also had it in commercial fishery for the same reason. Some of your work is also somewhat related to the Bureau of Mines. It had a problem not with pesticides but with draining of coal lands, especially from strip coal land. One place in Pennsylvania there is an overflow from the mines into the river and it killed the fish. That caused a material health hazard.

I guess you know about that particular problem.

Dr. ANDERSON. I recall this. I do not know the specifics of it right now.

Mr. DENTON. Now, can you give me examples of any other things like pesticides, rather short, that would come in this category, this catchall, that would not be in a specific category?

TOXIC EFFECTS OF SOLVENTS AND HARDENERS

Dr. ANDERSON. Well, there are various kinds of resins that are developed today for various purposes, household purposes, which of themselves may have irritant toxicity aspects which need investigation. This would be another group of compounds that would be involved.

The compounds that are solvents, today's solvents and hardeners, for example compounds that are used— you have seen in these drug and hardware stores these glue kits which have two little plastic containers which you break open and mix the two and make your glue on the site. Well, one of those containers contains a hardener which is an irritant and toxic—potentially toxic, substance. Well, this is another group of substances, solvents and hardeners, that would come under investigation here by such a group as we are starting to set up here.

Now, do not let me lead you on, that we are going to do all of these things with the eight people that we are talking about adding here. This is just getting started.

LABORATORIES FOR BASIC RESEARCH

But basically these groups in this particular program, what they are going to be doing is setting up basic laboratories in toxicology methodology; basic laboratories in chemistry, physics, epidemiology, and physiology. The directors of these laboratories will constantly be surveying the kinds of chemicals that are in use in industry today, in agriculture. and in the home, to see what kind of problems are present in them and to see if they can develop basic techniques which will be adaptable to studying some of these group problems that exist.

Dr. Terry. Mr. Denton, if I may, I think in a certain respect one might compare this basic environmental health scientist program in in the field of environmental health to our Division of General Medical Sciences in the NIH program.

Mr. Denton. Yes. I have been thinking about the same thing.

CONDEMNING SPRAYED CABBAGE

Now, I was down at the Food and Drug Laboratory in New Orleans and they had comandeered or condemned some cabbage. When the cabbage was young they happened to spread it with insecticides, and the leaves grew up and covered part of the cabbage that was sprayed, and that was a health hazard.

Now that was a function of Pure Food and Drug. It seemed to me that would run into some conflict with what you are proposing to do and also with what Agriculture does.

Dr. Anderson. Their activities related to the examination of produce moving in the channels of the market to determine whether or not there were pesticides, pesticide residues on that produce which were in excess of the permitted figure, whatever it might have been, and we would not be doing this.

Mr. Denton. They told me that it was in violation of the law to spray that the way they had.

Dr. Anderson. Yes.

Well, this could be that the farmer who used the insecticide or pesticide did not follow the instructions which were on the insecticide.

Mr. Denton. That is what they said.

Dr. ANDERSON. Yes, this is why the insecticide was inside the heads of cabbage.

Mr. DENTON. Another problem: Not only the insecticide but the kind of fertilizer used on the ground; that could be very serious.

Dr. ANDERSON. Well, yes.

Some of the fertilizers that are used do get into drinking water supplies and streams and cause problems that way, yes.

Mr. DENTON. Yes. I think that is all.

Mr. FOGARTY. Thank you, Dr. Anderson.

AIR POLLUTION

WITNESSES

VERNON G. MACKENZIE, CHIEF, DIVISION OF AIR POLLUTION
DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	2,095	2,569	2,749
Positions other than permanent	81	74	74
Other personnel compensation	10	5	22
Total personnel compensation	2,186	2,648	2,845
12 Personnel benefits	285	332	347
21 Travel and transportation of persons	250	331	337
22 Transportation of things	46	54	54
23 Rent, communications, and utilities	113	128	161
24 Printing and reproduction	48	65	65
25 Other services	158	251	251
Research contracts	1,020	1,400	1,400
Services of other agencies	716	878	918
Payment to—			
Bureau of State Services management fund	724	871	944
National Institutes of Health management fund	18	37	51
26 Supplies and materials	270	300	300
31 Equipment	344	425	430
32 Lands and structures	32		
41 Grants, subsidies, and contributions	2,066	3,342	4,895
Total obligations	8,276	11,062	12,998

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	371	407	417
Full-time equivalent of other positions	14	12	14
Average number of all employees	338	384	403
Number of employees at end of year	382	447	457
Average GS grade	7.5	7.8	7.7
Average GS salary	$6,493	$7,104	$7,070

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	1,944	2,892	3,895
(*b*) Training	108	450	1,000
(*c*) Survey and demonstration	13		
2. Research, training, and technical services	6,318	7,720	8,103
Total program costs, funded [1]	8,384	11,062	12,998
Change in selected resources [2]	−108		
Total obligations	8,276	11,062	12,998
Financing:			
Unobligated balance lapsing	314		
New obligational authority	8,590	11,062	12,998
New obligational authority:			
Appropriation	8,800	11,069	12,998
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−210	−7	
Appropriation (adjusted)	8,590	11,062	12,998

[1] Includes capital outlay as follows: 1962, $507,000; 1963, $425,000; 1964, $430,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $426,000 (1962 adjustments, $91,000); 1962. $409,000; 1963, $409,000; 1964, $409,000.

GENERAL STATEMENT

Mr. FOGARTY. Mr. MacKenzie, we are glad to see you here again to testify on the air pollution appropriation. Go right ahead.

Mr. MACKENZIE. Thank you. I have a statement which, with your permission, I would like to submit for the record and summarize orally.

(The statement follows:)

Mr. Chairman and members of the committee, The recommendations and reports of your committee over the past several years have reflected an awareness, understanding, and concern over the air pollution problems which are increasingly affecting the health and welfare of the American people. The President has gone on record, in several messages to the Congress and in his recommendations for strengthened Federal air pollution legislation, expressing the urgency for intensified action to control air pollution. In addition to several distinguished technical and scientific groups which have studied the air pollution problems and recommended sharply increased levels of research and control activity, organizations representing the areas most severely affected by air pollution, such as the American Municipal Association, the National Association of County Officials, and the U.S. Conference of Mayors, have officially advocated accelerated Federal leadership and assistance. The scientific evidence from an increasing number of studies on the relationship between air pollution and lung cancer, pulmonary emphysema, and a suffocating type of asthma, is indeed sobering to those concerned with the responsibility for protecting the public health.

The concern of the medical profession has been manifested through statements made and positions taken by the American Medical Association. Upon the establishment of a new department of environmental health as part of the American Medical Association, the first director of that department, Dr. Millard B. Bethel, pointed out that "Smog has become a major national concern * * * The private physician can treat his patient for a lung ailment, but he can't clear up the air pollution that may be responsible for the condition all by himself. That's a job for the community and the Nation." In a message to the National Conference on Air Pollution in December 1962, the AMA declared that air pollution is one of the Nation's most serious environmental health problems and urged the Public Health Service to provide the leadership in combating it. "It can and should be controlled" said Dr. F. J. L. Blasingame, AMA executive vice president. "* * * Enough has been said. Let's clear the air."

The details of the air pollution program proposed for 1964 are contained in the justification material in the budget request submitted for consideration of the committee. An increase of $1,936,000 is requested for 1964 to permit additional research and training activities. This increase will make possible further progress toward reaching the national levels for such research and training activities recommended by several distinguished scientific groups. Of the total increase, $1,553,000 is scheduled for support of grants for research and for training. An increase of $383,000 for direct Public Health Service activities has been requested.

RESEARCH

The major portion ($1,003,000) of the increase requested for 1964 is for support of research grants, which are made primarily to universities. Much valuable information regarding the health effects of air pollution has come from such studies supported by the Public Health Service in universities. The members of this committee, and the public generally, recall the disastrous air pollution episode which struck Great Britain this past winter, with appalling results in terms of lives lost, besides serious economic consequences. Such disastrous acute episodes, which can and have occurred in this country, sometimes have the unfortunate effect of diverting attention from serious health hazards which may not be so readily apparent. These are widespread disability and death from commonly occurring levels of community air pollution—so called hidden disasters—and chronic disabilities, primarily pulmonary, resulting from years of continuing exposure to community air pollution of the type now common in nearly all of our urbanized and industrialized areas. "Hidden disasters" remain hidden unless one carefully investigates, and recent investigations in New York City and New Orleans have uncovered evidence of serious health effects resulting from air pollution situations. These types of studies, as well as the extremely difficult, painstaking, and long-term type of laboratory and field studies to evaluate chronic effects of long-term exposures, serve as good examples of the work which the research grant program supports.

Under the heading of "Research, Training, and Technical Services," an increase of $299,000 for research is requested. This increase will be used for two purposes: (1) Additional studies of the feasibility of reducing automotive vehicle emissions by modifications of engine design intended to burn the fuel more completely; and (2) expansion of studies of atmospheric dispersion of pollutants from large urban areas.

The report of the House Appropriations Committee last year, as well as the report, "Motor Vehicles, Air Pollution, and Health," which was transmitted to Congress in June 1962, both emphasized the urgent need for accelerated research into the problem of automotive emissions as they relate to air pollution with special emphasis on more fundamental approaches to reducing emissions through improved design of engines. The results of recent studies are encouraging as to the possible progress to be made in this way. Additional work will also be conducted which is concerned with the long-range movements of clouds of air pollution. There is evidence that bodies of air pollution travel at least 100 miles from the original source. This means, of course, that air pollution often moves from one urban area to another. In view of the growth of the pattern of closely spaced urban areas, such as those along the eastern seaboard, a better understanding of the transport, diffusion, and related behavior of air pollutants in such situations is necessary if adequate systems of control are to be implemented.

TECHNICAL ASSISTANCE

The States and communities, which have the responsibility for the regulatory control of air pollution, are beset with many obstacles for effective control activity. Certain of these obstacles can be removed under the current Federal Air Pollution Act, through the provision of technical assistance, which involves short-term advice and consultation, cooperative field surveys, assignment of air pollution specialists, Public Health Service technical staffing in regional offices, and preparation and dissemination of a wide variety of technical manuals. This activity will be continued at approximately the 1963 level.

TRAINING

A serious dearth of trained air pollution personnel is among the more fundamental of the difficulties encountered by State and local air pollution control agencies, as well as by those industries which have instituted or intend to establish control programs. The program proposed for 1964 will permit further improvement in this regard. An increase of $550,000 in training grants to universities and graduate trainees and $57,000 in short-term training conducted by the Public Health Service is requested in the estimates. The grant-in-aid program will permit expanded financial assistance to universities to establish and improve graduate-level air pollution teaching programs and will provide increased assistance, through stipends, to graduate students qualified and desirous of graduate-level air pollution study. The direct short-term training activity of the Public Health Service complements the full-time graduate type of training in universities sponsored through the grant program. Three new courses, principally for employees of State and local air pollution control agencies, as well as for industrial personnel, will be added to the curriculum now offered at the Sanitary Engineering Center in Cincinnati, Ohio. Expanded instruction will be given also in the varied locations throughout the country.

APPLICATION OF EXISTING KNOWLEDGE

Several recent events have served to highlight what may be called a crucial "crossroad" in the air pollution program. The events are the disastrous smog episode in Great Britain and the National Conference on Air Pollution, both of which occurred this past December. The "crossroad" represents a current stage where we possess a respectable body of technical knowledge and experience which can be effectively used to control and prevent air pollution but which simply is not being used to the degree that it should.

The recent air pollution disaster in Great Britain cannot be considered a foreign phenomenon unrelated to our experience and conditions. Dr. Richard A. Prindle, Deputy Chief of the Division of Air Pollution, was personally on the scene in London during the height of the smog episode. Besides personal investigations, including clinical rounds at hospitals where smog-affected patients were being treated, Dr. Prindle met with the responsible British public officials, and has submitted his findings in a report. There is a significant consensus that the control measures instituted, based on national legislation enacted in 1956, helped to reduce the concentrations of particulate pollutants which otherwise might have reached the higher levels experienced in 1952 in London, where 4,000 excess deaths attributable to air pollution occurred during a similar type of episode.

The importance of putting existing knowledge to more widespread use was heavily emphasized at the National Conference on Air Pollution which was attended by over 1,400 participants representing all levels of government, industry, and other important and affected segments of the public. There was little doubt that progress in cleaning up our community atmospheres would have to be accomplished through public action by the States and communities, with the Federal Government participating to a greater extent than heretofore in its assisting and leadership role.

These observations are made because it is important for the members of the committee, and the public generally, to understand not only what the present Federal air pollution program can accomplish through its research and technical assistance program, but also to appreciate that our air pollution problems will remain critical and severe unless there is a far greater and widespread investment in resources by the States and communities in cleanup and prevention activities. As a first critical step, many communities have yet to undertake a complete survey of their problems as a means of understanding more precisely just what type of control activity is needed. With a full realization of the many financial, administrative, and jurisdictional difficulties which serve to impede effective local control activity, the use of the term "investment" is an appropriate one—for the potential returns in a sheer economic sense are impressive, and the returns in the sense of the health and well-being of our citizens, are incalculable.

Mr. MacKenzie. The members of this committee are fully aware, I am sure, of the seriousness of the Air pollution problems which are increasingly affecting the health and welfare of the American people. The President, in several messages to the Congress, organizations such as the American Municipal Association, the National Association of County Officials, the U.S. conference of mayors, the American Medical Association, as well as several other distinguished scientific organizations, have gone on record expressing the urgent need for action to control air pollution. Those charged with public health responsibility are highly concerned about the scientific evidence that air pollution does contribute to the development of lung cancer, pulmonary emphysema, and a suffocating type of asthma.

BUDGET REQUEST

For 1964, an increase of $1,936,000 is requested to permit additional research and training activities. Of the total increase, $1,553,000 is earmarked for support of grants for research and for training. An increase of $383,000 is requested for direct operations.

Much valuable information regarding the health effects of air pollution has come from research grants, which are made principally to universities. The health effects associated with acute air pollution episodes, such as that which occurred in Great Britain this past winter with appalling results, are well known. Much more needs to be learned, however, of the details of the widespread disability and death from more normal exposures to community air pollution. The research grant program, through the research it supports and the reports which will be published, will help to clarify these, as well as related air pollution problems.

The $299,000 increase requested for direct research will be used by the Public Health Service in two important areas: One, study of the potential for reducing automotive emissions through improved engine design; and, two, study of the long-distance transport of clouds of air pollution between urban centers. The 1962 report to the Congress entitled "Motor Vehicles, Air Pollution and Health," confirmed the serious health hazards of automotive pollutant emissions and discussed the need to explore more fundamental means for control rather than relying solely on the development of exhaust afterburners. The committee members may know, also, of the evidence of air pollution travel over long distances, which requires a better understanding in order to achieve satisfactory control.

Among the more serious of the difficulties faced by the States and localities is the dearth of trained air pollution personnel. The training program proposed for 1964 will permit improvement in this regard, by expansion of graduate level university curriculums through grant assistance, and by the addition of several courses to the short-term training program for State, local, and industry employees conducted directly by the Public Health Service.

NEED FOR CONTROL REGULATIONS

I would like to comment briefly on the general need for a much greater application of existing technical knowledge to control activity than now exists. The recent air pollution disaster in Great Britain would undoubtedly have been more serious without the control measures which were taken, after legislation was enacted in 1956. Also, the importance of increased control activity was heavily emphasized at the National Conference on Air Pollution held here in Washington last December.

Unless there is far greater activity by the States and communities in regulatory control activities, our air pollution problems will remain critical. It is imperative, primarily for reasons of safeguarding the public health but also for economic common sense, that all levels of government make the necessary investments to do the job. In this cooperative effort, the Federal Government must lead the way.

Mr. Chairman, I shall be glad to answer any questions you and the other committee members may have about the air pollution program and the budget request.

Mr. FOGARTY. Thank you, Doctor.

The appropriation for 1963 is $11,069,000 and the request for 1964 is $12,998,000, an increase of $1,929,000 and 10 positions.

ABSORPTION OF ADDITIONAL EXPENSES IN 1963

Now, the President has indicated he considers air pollution one of this Nation's big problems that we should be doing more about, has he not?

Mr. MACKENZIE. Yes, sir.

Mr. FOGARTY. Congress has indicated the same opinion, has it not? We even increased your appropriation a year ago over the request that was made?

Mr. MACKENZIE. Yes, sir.

Mr. FOGARTY. And both Secretary Ribicoff and Secretary Celebrezze have indicated that they agree with the President have they not?

Mr. MACKENZIE. They have.

Mr. FOGARTY. Then why are you cutting back this work to absorb all of your pay act costs, all of the postal increase costs, and all of the increased costs for quarters allowances in 1963?

Mr. MACKENZIE. Sir, I think the budget provides for no cutback in any of our activities. There is an increase both in our direct intramural program and an increase in the grants activities, both for training and for support of research.

Mr. FOGARTY. You did not quite get my question I guess, Doctor. Or you are trying to get around it.

The question is—after all of these people that are behind the program—the President, Congress, and two Secretaries; then I say: Why are you cutting back this work to absorb all of your pay act costs, all of the postal increase costs, and all of the increased costs for quarters allowances in 1963?

Mr. MACKENZIE. Yes, sir. The budget before you provides for support of the increased costs for salary increases, incident to the bill passed by the Congress last year, and also increases in travel costs that were also provided. In addition to this, there is a small increase in the direct activities.

Dr. TERRY. He is asking about 1963.

Mr. MACKENZIE. 1963? Excuse me, sir.

Mr. FOGARTY. I thought you were trying to avoid the question.

Mr. MACKENZIE. No.

Mr. FOGARTY. All right, I will repeat it again then: Why are you cutting back this work to absorb all of your pay act costs, all of the postal increase costs, and all of the increased costs for quarters allowances in 1963?

Mr. MACKENZIE. This is done, sir, under the fiscal policy of the executive branch.

Mr. FOGARTY. It is not your fault?

Mr. MACKENZIE. No, sir.

Mr. Fogarty. This question has been asked of almost every division.

The Department of Labor apparently stood up to the Bureau of the Budget and said: No, we will not absorb any of these pay act increases. At least they did something different than this department did. I thought this was so important that they might be asking for more money instead of making you absorb all of these increased costs.

Mr. MacKenzie. This was a policy decision, sir, in which I did not participate.

Mr. Fogarty. You did not recommend it.

Mr. MacKenzie. Yes, that is right.

Automotive Exhaust Research

Mr. Fogarty. Last year this committee increased your budget $1 million for increased work on automobile exhaust. How is that being used?

Mr. MacKenzie. It is being used principally for three purposes. We increased the allocation for support of research grants in the amount of $250,000. The research grants activity is supporting a considerable number of research projects at universities and similar institutions concerned with the problems of emissions from automotive vehicles.

In this particular area, this permitted the funding of seven additional research grants which it would not otherwise have been possible to support.

Secondly, we have initiated directly in the Public Health Service in our laboratory at Cincinnati and through support of contract activities elsewhere, studies concerned with the possibilities of decreasing emissions from automobiles by making revisions in the design of the engines themselves, rather than adding afterburners as an adjunct in the exhaust system.

A third item——

Mr. Fogarty. What was that last statement you just made?

Mr. MacKenzie. We are investigating the possibility of reducing emissions from automotive vehicles by revisions in engine design rather than adding afterburners in the exhaust system of such vehicles.

Mr. Fogarty. The reason I asked that was we have an air pollution man in Rhode Island, Mr. Costatino, who is very active in this field.

Mr. MacKenzie. Yes.

CRANKCASE BLOWBY DEVICES

Mr. Fogarty. I bought a new car a short time ago. I had one of these blowby devices on the car I traded in. I said to the dealer, "I want that taken off and put on this car." He said, "You do not need that; these cars come with this built in the engines now."

When I told Mr. Costatino that, he said that is nowhere as good as the blowby device I had in the other; I had better take it off and put it on this car. He does not agree with what they are doing, he does not think it is anywhere near as good as this other blowby device.

Mr. MacKenzie. There are several designs of blowby devices, Mr. Chairman, that have either been sold by independent industrial concerns or used by the principal automotive manufacturers. All of these, I think, from the air pollution standpoint, are equally satisfactory.

I think some particular designs may have some other advantages that would appeal to the owners of the vehicles.

Mr. Fogarty. He told me in a letter that in a meeting he had with Mr. James Chandler, a research engineer with the Ford Motor Co., he asked these questions:

> 1. In view of the established fact that the vapors extracted from the crankcase by the blowby devices to be recycled back to the combustion chamber contain harmful ingredients, such as metallic fuzz, carbon, varnish, acid, and so forth, why aren't effective prefilters used on blowby devices to remove these impurities?
>
> 2. Is it not reasonable to assume that if and when these impurities reach the engine parts, engine wear may be accelerated causing a drop in engine efficiency thus resulting in increased blowby—the vicious circle?
>
> Based on this assumption, will crankcase devices do more harm than good unless prefilters are used?
>
> 3. Will lack of proper service and maintenance of blowby devices result in poor engine performance, thereby likewise increasing crankcase blowby?

In the answer to the first question, Mr. Chandler replied that because no serious trouble had developed in blowby device equipped cars in California, there was no need for concern on this score, neglecting to state, however, that instructions regarding blowby devices warn that clogging of valve will result in poor engine performance and stress the need of periodic maintenance. In addition, Mr. Chandler scoffed at the thought that the automotive industry did not know what it was doing, adding that he assumed that "a filter is hidden somewhere in the system."

He then stated that his answer to question No. 1 naturally "took care of No. 3."

He replied that question 2, however, reminded him to make note of the fact that all new cars now have extended warranty periods and that this proved that the car manufacturers were very interested in longer engine life.

Mr. Costatino said—

> I am still wondering just what he meant, but unfortunately my discussion time was limited to 3 minutes, so that I had no opportunity for rebuttal.

Mr. Fogarty. What do you think of this?

Mr. Costatino is one of our most respected engineers who has taken a great deal of interest in the air pollution program in our State. He has had these blowby devices installed on city trucks.

Mr. MacKenzie. Well, I might comment on the matter you have been discussing, Mr. Chairman.

Mr. Chandler, at our national conference on air pollution held here in Washington in December, spoke at one of the panel sessions in behalf of the automotive industry with respect to the installation of blowby devices. He stated that, in his opinion, the crankcase emission problem had been successfully resolved and that once the industry had become convinced that this was desirable, in the public interest, that it had hastened to take appropriate action to provide these devices on all new automobiles that were manufactured in the current model year.

We think that this has been a progressive step on the part of the industry and one that is significant in reducing pollution emissions from automobiles.

We are concerned, however, about the possible maintenance problems that are associated with these devices and whether or not they are receiving appropriate attention.

In one of the regions of this country where we have a regional air-pollution representative, we recently made a survey of the extent to which the gasoline service stations and automobile mechanics, sales outlets, and similar establishments have been acquainted with the installation of these blowby devices and the need for periodic maintenance of them, if they were to continue to maintain their efficiency and not to interfere with the operation of the vehicle itself. The information that we developed as a result of this survey indicated that, in our opinion at any rate, some improvement would be desirable in this respect.

We have taken this matter up with the Automobile Manufacturers Association and are hopeful that some improvement in this regard will be effected.

In general, the automobile agencies apparently are well acquainted with the properties of the devices and the need for periodic maintenance. This, up to now, however, is not completely true with respect to the service people at gasoline stations.

Mr. FOGARTY. What is going to be done about it?

Mr. MACKENZIE. Well, we hope that, in cooperation with the automobile industry and perhaps the oil industry, some improvement can be effected in acquainting the service station employees with the need for periodic attention of these devices.

Mr. FOGARTY. If past history is worth anything, your hopes are not very high, then.

COOPERATION BY AUTOMOTIVE INDUSTRY

Mr. MACKENZIE. Well, now, I think the cooperation from the automobile industry has distinctly been improving with respect to collaborative activities on this problem.

Mr. FOGARTY. It is taking them an awfully long time.

Mr. MACKENZIE. I would not want to comment on timing. The amounts of money and the attention now being given, however, to this problem by the automobile industry I think is of a different order of magnitude than was the case a number of years ago.

Mr. FOGARTY. Not so many years ago. According to some of your predecessors, anyway.

Mr. MACKENZIE. Well, I think the automobile industry is a large industry, Mr. Chairman, and undoubtedly there are individuals who are dragging their feet within it.

From the information, however, that we see as of now, the policy-making people in the industry are cognizant of the problem and are devoting more and more attention than was the case in the past.

Mr. FOGARTY. Well, that could be hardly anything.

Are you satisfied with the progress that they have made?

Mr. MACKENZIE. No, sir; I am not satisfied with their progress—or our progress.

I think air pollution is a serious problem in this country and I would like to see corrective action taken at a faster pace than we are now accomplishing.

ORIGINAL BUDGET REQUEST AND EFFECTS OF REDUCTION

Mr. FOGARTY. But you only have $13 million in the budget for 1964. If you think it is that important, why aren't you asking for twice this much?

Mr. MACKENZIE. The budget that has been approved is, of course, in accordance with the overall fiscal policies of the Government and will permit us to make progress toward the objectives that we have.

From the technical standpoint I think undoubtedly additional resources could be devoted to this problem, but within the overall fiscal policy, this budget will still permit us to make progress.

Mr. FOGARTY. Tell us in your best professional judgment what we ought to be spending in 1964 in lieu of this halfhearted attempt to do something about air pollution.

Mr. MACKENZIE. From a technical standpoint, Mr. Chairman——

Mr. FOGARTY. Technical and professional.

Mr. MACKENZIE. Our initial proposal for budgetary support in the 1964 fiscal year totaled $25,300,000.

Mr. FOGARTY. Do you still think that is a realistic figure?

Mr. MACKENZIE. I think it is a realistic figure, one that could be effectively used, yes, sir.

Mr. FOGARTY. Will you supply for the record a breakdown of that $25 million?

That is just about double of what you are being allowed to request for 1964?

Mr. MACKENZIE. Right.

Mr. FOGARTY. And what you think some of the harmful effects will be if Congress does not appropriate the additional $12 million.

Mr. MACKENZIE. Yes.

(The information follows:)

Explanation of effect of budget estimate reductions—Budget estimates, fiscal year 1964, Division of Air Pollution

	PHS Request to Department		Bureau of Budget allowance		Total decrease	
	Positions	Amount	Positions	Amount	Positions	Amount
Total	555	$25,332,000	417	$12,998,000	−138	−$12,334,000
Grants		10,400,000		4,895,000		−5,505,000
Research		6,000,000		3,895,000		−2,105,000
Training		2,000,000		1,000,000		−1,000,000
Survey and demonstration grants		2,400,000				−2,400,000
Research	420	12,614,000	339	7,039,000	−81	−5,575,000
Analysis, identification, measurement, and control of air pollution		5,346,000		3,876,000		−1,470,000
Medical and biological studies		4,251,000		1,963,000		−2,288,000
Community and other field studies		3,017,000		1,200,000		−1,817,000
Technical services	88	1,620,000	47	708,000	−41	−912,000
Training	47	698,000	31	356,000	−16	−342,000

Research grants, —$2,105,000

Research grants constitute the mechanism of support to research workers at universities and other institutions outside of the Federal Government. The grants have been used to encourage and support fundamental research as a foundation for improved understanding and control of air pollution. Analysis of past experience, including the percentage rate of approval of applications was the basis for the $6 million request submitted by the Public Health Service. This would have been used to support all of the research applications approved by the non-Federal advisory review bodies and was designed to eliminate the backlog of such approved projects by the end of 1964. The $2,105,000 decrease would have provided for approximately 84 research grants. The estimate of $6 million for research grants plus the proposed amounts for intramural research were intended to put the program on the schedule recommended by several expert advisory committees.

Training grants, —$1 million

It has been estimated that a deficiency of approximately 4,000 specially trained air pollution personnel will exist by 1970. The estimate of $2 million was developed on the basis of a schedule of training support designed to eliminate this projected manpower gap as recommended by the Surgeon General's Committee on Environmental Health Problems. The estimate provided for the acceleration of curriculum development, improved teaching capability, and expansion of the traineeship program which provided graduate-level air pollution training. The number and scope of proposed grants must be reduced as a result of the $1 million decrease.

Survey and demonstration grants, —$2,400,000

Authorization for grants for surveys and studies is provided in Public Law 159, as amended by the 87th Congress. The basic objective of this item was to assist States and local governments to obtain the necessary information for national planning, organization, and development of air pollution control programs needed in their respective jurisdictions. The complete deletion of this item from the budget request eliminates this element of Federal leadership in the assessing of air pollution problems and in assisting in development of control systems.

Research, —$5,575,000

The research program estimate was based on program experience as to research needs and on the criteria and guidelines recommended in the reports to the Surgeon General, "National Goals in Air Pollution Research" and "Environmental Health Problems, Air Pollution," and the National Academy of Sciences report, "The Atmospheric Sciences." For these needs, the Public Health Service requested $12,614,000 for operations, including direct research, research by other Federal agencies, and contract research by non-Federal organizations. The appropriation request contains $7,039,000 for this activity.

Analysis, identification, measurement and control of air pollutants, —$1,470,000

The original request provided specific support for the development of criteria and objectives for ambient air quality standards for use by State and local agencies in their regulatory control programs. The estimate also provided for an expansion of engine design modification studies needed for the control of emissions from automotive vehicles. Proposed increases in research activities on sulfur dioxide removal from stack gases and on meso-scale studies of intraurban and interurban transport and diffusion of air pollutants will also be postponed as a result of the decrease in the budget request.

Medical and biological studies, —$2,288,000

The original request recognized the need for increased emphasis on bioclimatological research and on assessment of the damaging effects of air pollutants on plants and animals. Controlled environmental and agricultural research facilities were eliminated as a result of the reduction. Increased activity in the areas of biochemical relationships of air pollutants to pulmonary cancer, studies of emphysema, and studies of the chronic toxicity of the oxides of nitrogen will be curtailed.

Community and field studies, —$1,817,000

The Division's original budget estimate included $1,817,000 above the appropriation request for community and other field studies. Such research studies are essential to supplement and substantiate the results of laboratory investigations and to determine the degree of their applicability to man. Important leads have been developed as to the relationship between air pollutants and acute respiratory infections and also chronic respiratory diseases such as bronchitis, asthma, and emphysema. The planned expansion of epidemiological studies to exploit these leads and develop more specific information applicable to man's health will be postponed as a result of the budgetary decrease.

Technical services, $912,000

The decrease in funds for technical services will make it impossible to accomplish two purposes originally intended: (1) provision of technical assistance on all important specific problems pursuant to requests from States and local governments; at present, many of these have to be refused because of lack of resources; (2) provision of technical assistance to State and local agencies in surveys and appraisals of air pollution preliminary to their organization of control programs.

Training, $342,000

The request provided for increased activities in resident and field courses conducted by the Public Health Service, and in assistance to universities. The purpose of the short-term training program is to shorten the gap between acquisition of new research knowledge and its application in actual practice by employees of State and local governments, and of industry. The $342,000 which was disallowed would have provided for expansion and extension of the existing program. The increase was scheduled to cope with the increased demand by State, local, and industrial air pollution control personnel for such training and to disseminate the newly acquired research information more quickly.

EFFECT OF REDUCTIONS IN 1964

The effects of such a reduction (approximately $12 million) are multiple, and range from that of delaying certain accomplishments to the actual deletion of other program activities.

For research, such a reduction will result in delay, with consequently longer time required to develop needed information. This information is necessary in view of the known serious effects on health. An increase in the time necessary to develop this information correspondingly increases the time when prevention of such adverse effects and removal of such hazards can be undertaken.

The reductions in technical services, training, and demonstration and survey grants seriously curtail planned program activities aimed at the dissemination and application of knowledge. Although much yet needs to be learned, existing techniques and methods can provide for the reduction of the air pollution problem in very large measure, if they are applied. In order to assure this, however, individuals must be trained, appraisals of specific problems undertaken, and financial and technical assistance provided to the State and local agencies charged with the control responsibility.

CRANKCASE BLOWBY DEVICES

Mr. FOGARTY. How many States now require cars to be equipped with blowby devices?

Mr. MACKENZIE. I think as far as a legal requirement is concerned, there are two: California and New York.

Mr. FOGARTY. New York?

Mr. MACKENZIE. Yes.

The New York law, I believe, becomes effective a little later in this calendar year.

Mr. FOGARTY. How effective are these?

Mr. MACKENZIE. Fully effective in reducing the hydrocarbon emissions that otherwise are vented from the crankcase.

Now, I should qualify that effective label I put on them to the effect that some automobiles that have not been properly maintained, when they get old and have high mileage on them, may leak more blowby gases past the pistons than the capacity of the blowby device will take care of.

But for those automobiles that are normally maintained, the blowby devices that are currently available are fully effective in reducing the hydrocarbon emissions by automobiles by about 30 percent, the remaining hydrocarbons being emitted from the exhaust pipe primarily.

COOPERATION BY AUTOMOBILE AND PETROLEUM INDUSTRIES

Mr. FOGARTY. Are you satisfied with the progress that is being made by the petroleum industry?

Mr. MACKENZIE. No, sir. I think the same statement made about the automobile industry would apply to the petroleum industry as well.

Mr. FOGARTY. Do you think the petroleum industry is trying more than the automobile industry or vice versa?

Mr. MACKENZIE. I think comparisons between industries may be odious to them. I would like to leave it that I think both of these industries could be doing more, and I would extend the statement to other segments of industry as well.

Now the petroleum industry has exhibited an interest in cooperating on research studies related not only to their own refinery and other operations, but also to the use of their products.

They are supporting some research through the American Petroleum Institute at private research institutes relating to the carcinogenic properties of petroleum products, to the emissions from motor vehicles, to analytical methods for petroleum products and the air pollutant emissions that derive from their use, and to the atmospheric chemistry that is associated with such types of emissions.

SOURCES AND TYPES OF AIR POLLUTANTS

Mr. FOGARTY. What percentage of total air pollution do you estimate is caused by automobiles, trucks, and buses?

Mr. MACKENZIE. Well, percentages are, I think, a little misleading in this regard, Mr. Chairman.

I would rather speak, if I may, about the relative proportions of specific pollutant emissions with your permission.

Mr. FOGARTY. Why do you want to avoid a percentage figure?

Mr. MACKENZIE. Well, pollutant emissions—if I think about a large powerplant——

Mr. FOGARTY. You have had all kinds of studies in various cities. I know in Providence you conducted one and the pollution was worst in the period when people are going to work and going home from work.

Mr. MACKENZIE. This can best be talked about in relation to specific pollutant materials. With respect to hydrocarbons, for example, the automotive vehicle is undoubtedly the major cause of such emissions in urban communities.

If you talk about other important pollutants, such as sulfur dioxide which comes primarily from burning of fuels that contain sulfur, the automobile contributes little to this problem.

With respect to carbon monoxide, again, the automotive vehicle is the principal source of this type of pollutant.

For another example, the oxides of nitrogen, the automotive vehicle is one of the principal pollutant sources for this type of contaminant, but equally as important are fuel-burning furnaces in industry and in power generation.

So that overall, I think from a percentage standpoint it is better to talk of specific pollutant types, rather than of a total pollution.

Mr. FOGARTY. Is that all you want to say about the air pollution caused by automobiles, trucks, and buses.

POLYCYCLIC HYDROCARBONS

Mr. MACKENZIE. Well, I would like to mention one other important type of pollutant which is emitted by automotive vehicles and these are the polycyclic hydrocarbons which are considered to be potentially carcinogenic. They have caused cancers in experimental animals. These substances are found in appreciable quantities in urban atmospheres. In the last year we have been appraising the importance of various sources of polycyclic hydrocarbon emissions from industry, and from combustion sources, including automobiles. In general, we find that in most areas the furnaces used in industry and elsewhere are a primary source of these important pollutants. The automotive vehicle is second in rank as a source.

Mr. FOGARTY. What kind of industries, particularly?

Mr. MACKENZIE. These may come from any large fuel users, or small fuel users for that matter. In general, we find that the polycyclic hydrocarbon emissions are associated with the efficiency of combustion; that is, if the fuel is burned efficiently, the concentration of polycyclic hydrocarbons in the flue gases is relatively low. So for large power stations, where the fuel is burned efficiently, the quantities of these materials may be relatively small. For intermediate sizes of furnaces in commercial and small industrial establishments, the combustion efficiency is generally less and there are much larger quantities of these materials discharged. In some very small installations, such as household space heating units, enormously large concentrations of these materials may be discharged if the fuel is not burned efficiently.

Mr. FOGARTY. You mean like oil heating stoves?

Mr. MACKENZIE. We have found in our studies that the largest concentrations have come from the inefficient combustion of coal, with somewhat lesser quantities from the inefficient combustion of liquid petroleum fuels, and still less from small sized furnaces burning gas.

The range of such emissions is very great, so that one of our tests, for example, indicated that a coal-fired home heater, in that particular instance, emitted more polycyclic hydrocarbon materials than did a large electric generating station.

Mr. FOGARTY. What kind of coal is this?

Mr. MACKENZIE. Bituminous coal.

Mr. FOGARTY. You would not have that problem in Rhode Island?

Mr. MACKENZIE. No, sir.

Mr. FOGARTY. Have you learned anything from that program carried on in Providence? I can remember reading that the pollution increased in that period, an hour and a half or so when people were going to work and the similar period going home from work.

Mr. MACKENZIE. Generally, I think the appraisal of the air quality in Providence indicated that a reasonably good control program was being operated. There were instances, however, of adverse meteorological conditions when appreciable concentrations of pollutants did occur.

DISTRICT OF COLUMBIA BUS PROBLEM

Mr. FOGARTY. What is being done in the District of Columbia for the control of pollution caused by buses?

Mr. MACKENZIE. The District of Columbia government has been interested in appraising the air pollution program and——

Mr. FOGARTY. They have been appraising it for a long time, have they not?

Mr. MACKENZIE. They have been cooperating with the Metropolitan Council of Governments in sampling the air. We have been providing them some assistance in this regard. The Engineer Commissioner has been interested in reducing emissions from automotive vehicles and I believe has instructed the police to issue tickets or citations to vehicles that are considered to be excessive smoke emitters.

Mr. FOGARTY. They would take most of the buses off the street if they carried that out; would they not? Have you ridden behind one of these buses? Why don't you get behind one and follow it to work?

AIR POLLUTION PROGRAM IN WASHINGTON

How does Washington compare with other cities in the country as far as doing something in air pollution? It seems to me I do not read about any action in the city. We do not have much industry here. It seems to me this would be one of the easiest to make a model of.

Mr. MACKENZIE. Washington is not one of the cities that has a definitive air pollution program designed to consider the problem in all of its facets.

Mr. FOGARTY. You are very kind to them.

Mr. MACKENZIE. For a number of years they have had a smoke control activity in the District Government. The District Health Department has made budgetary proposals for the establishment of an identifiable air pollution program that would be effective across the board. The problem, from the air quality measurements that have been made in Washington and vicinity, apparently relates principally to two elements: first, automotive vehicles, and second, the combustion of fuels containing sulfur. Last fall, during one of the periods of adverse meteorology along the east coast, sulfur dioxide levels in the Washington area were measured in excess of three-tenths of a part per million for practically the entire day. Now, the maximum at this particular time went up to over a half part per million. I mention these figures because three-tenths is considered a threshold value for development of plant damage due to sulfur dioxide. We are concerned with the effects of sulfur dioxide at even lower concentrations than this on individuals having respiratory ailments.

ADVERSE METEOROLOGICAL CONDITIONS

Mr. FOGARTY. When you have that meteorological problem, how high does it go?

Mr. MACKENZIE. How high? Well, in general, there are several types of adverse meteorological conditions with which we are concerned.

One is the so-called low-level temperature inversion in which the temperature of the air, at some small distance above the ground, is higher than at the ground surface. This inhibits convective currents which dilute the pollutants in the air, and permits mixing only in a very shallow layer of the atmosphere. This is the condition that occurred last fall for an extensive period along the east coast.

Mr. Fogarty. How thick would that layer of heavy pollution be?

Mr. MacKenzie. In general, the condition that occurred last fall was lower than a thousand feet.

Mr. Fogarty. I see.

Mr. MacKenzie. The volume of air available for diluting pollutants, under the circumstances that occurred at that time, was only through a depth of approximately a thousand feet. There was no effective mixing above that level.

LARGE AMOUNT OF ENERGY REQUIRED TO BREAK THROUGH INVERSION LAYER

Mr. Fogarty. Isn't it possible to devise some means of breaking through this thing and create a draft?

Mr. MacKenzie. This type of proposal has received consideration on several occasions. Unfortunately, we are dealing with forces of nature that involve very large amounts of energy.

The amount of energy that would be required to effectively break through and move the vast volumes of air—essentially to pump is what would be required—through this inversion layer would be greater than any quantity of electrical energy that is available in the whole area here.

Mr. Fogarty. Even with all the research we put into atomic energy and everything else?

Mr. MacKenzie. As an example of this—this has been proposed with respect to the Los Angeles problem on numerous occasions and the computations that have been made as to the energy that would be required to break through the inversion layer in Los Angeles indicate that several times more energy would be required than all of the electrical energy that is consumed in the entire southern California area.

CLIMATE AND WEATHER CONTROL RESEARCH

Mr. Fogarty. Well, if we are going to spend billions and billions of dollars trying to put a man on the moon, sometimes I think we might be better off to spend a little more on research on something like this or are you going at the matter in another way?

Mr. MacKenzie. There is fundamental research being supported principally by the National Science Foundation on climate and weather control, as you may know. I think that in the long run, there may be some possibilities of improvement of the situation and assistance in handling air-pollution problems which may derive from such research. However, more practicable from the immediate standpoint is the approach of preventing the emission of the pollutants into the atmosphere initially and to obtain correction in this way. We know that improvement can be attained in this manner, whereas the other is a gleam in the eye, essentially.

Mr. Fogarty. There have been a lot of gleams that turned out to be something important and practical.

Mr. MacKenzie. Yes, I should say we should not give up hope, but there is no real indication that weather control is imminent.

Mr. FOGARTY. Is anything actually being done now to help in this particular air pollution problem?

HIGHER SMOKESTACKS

Mr. MACKENZIE. Actually, in large powerplants, the approach that has been taken is to build higher and higher smokestacks. The powerplants being constructed over the past decade, and apparently this trend will continue for some time in the future, have been increasingly bigger and bigger.

In order to dilute the oxides of nitrogen and the oxides of sulfur discharged from these large powerplants, the attempt has been to discharge the stack gases at higher and higher elevations.

In addition to building the stacks to higher and higher levels, we are conducting and supporting research on means of removing sulfur from fuels initially, and pollutants from the stack gases. Also, the effect of heat in the stack gases, that is, the buoyant effect, is helpful, and this factor is one to be taken into account in locating the powerplant with respect to topography and meteorological factors.

RESEARCH GRANTS

Mr. FOGARTY. About 90 percent of your program increase is for grants, $1,003,000 for research, and $550,000 for training.

For research, this seems to be mostly to continue financing of projects already started.

Mr. MACKENZIE. No, the research grants item would permit us to continue the support of a larger number of grants than has been possible this year.

The continuation grants would increase by approximately 42, and it would permit, also, the initiation of 49 new grants this year.

Mr. FOGARTY. But that is exactly the same as you had last year.

Mr. MACKENZIE. The same number as in 1963.

Mr. FOGARTY. That is the point that I was making. You are not showing any increase in new grants at all over 1963. For continuing grants you are showing a slight increase.

Mr. MACKENZIE. Yes, sir.

Mr. FOGARTY. But you are not going to start any more new projects in 1964 than you did in 1963.

Mr. MACKENZIE. The same number.

BACKLOG OF APPROVED BUT UNFINANCED GRANTS

Mr. FOGARTY. How many applications for good projects will you be unable to finance this year?

Mr. MACKENZIE. We estimate that at the end of 1963 we will have a carryover, a backlog of unsupported grants that have been recommended for approval, of about 32 projects in an amount of $717,000.

Mr. FOGARTY. How many do you estimate you will be unable to finance next year?

Mr. MACKENZIE. The backlog estimated as of the end of 1964 would total 62 projects at a total cost of $1,863,000.

Mr. FOGARTY. So you are only going to be able to finance about half or a little less than half of all your approved projects in 1964 with this budget?

Mr. MACKENZIE. That is correct with respect to the new projects.

INCREASE FOR TRAINING GRANTS

Mr. FOGARTY. What are your plans with regard to the $550,000 increase for training grants?

Mr. MACKENZIE. The $550,000 increase for training grants will go to additional institutional grants for training of individuals on a graduate level for both air pollution research and air pollution control operations.

We have estimated, and the Gross Committee has agreed with our studies, that if we are to accomplish the job that needs to be done in the United States with regard to research and control operations in this field, we need to train by 1970 approximately 4,000 additional individuals in various disciplines.

The training grants item is important in achieving this objective. In addition to the institutional grants there will be a number of direct traineeships that will be provided from this item.

Currently in the present year, we are supporting nine institutional grants to various universities and we are supporting about nine individual traineeships. In 1964 we would hope to more than double each of these figures.

Mr. FOGARTY. Do you think that is enough?

Mr. MACKENZIE. The present schedule will not permit us quite to reach the objective that we originally had of training 4,000 additional individuals by 1970. In order to accomplish that, a somewhat accelerated schedule would be necessary.

Mr. FOGARTY. How much? You can supply that for the record.

Mr. MACKENZIE. Yes, sir.

(The statement follows:)

TRAINING NEEDS IN AIR POLLUTION PROGRAMS

In accordance with the results of a manpower requirements study conducted by the Public Health Service and on the basis of the recommendations of the Committee on Environmental Health Problems, a total of $2,698,000 was requested for training activities in 1964, including grants-in-aid and direct training. The Service considered that this represented a realistic program of training in line with the study and the committee's recommendations.

As part of its statutory responsibility for conducting and supporting air pollution training activities, the Division of Air Pollution of the Public Health Service conducted a study of present national air pollution staffing patterns and the manpower needs which are estimated for the ensuing period through 1970. This study and analysis covered projected requirements for governmental control agencies, industry, research, and teaching. The manpower requirements were developed with a careful relationship to estimates of projected national air pollution research goals and estimated needs for air pollution control and abatement activities. The Public Health Service has had the advice and recommendations on air pollution research and control needs by eminent non-Federal groups, such as the Task Group on Air Pollution Research Goals and the Committee on Environmental Health Problems.

The latter committee, in its report published in 1962, reviewed the Division of Air Pollution's manpower requirements study and concurred in the key finding that, by 1970, approximately 4,000 specially trained individuals additional to those currently working in the field will be needed. The committee, accordingly, recommended that the Public Health Service undertake a training program, to include direct training by the Division of Air Pollution, fellowships, and support of university curricula, ranging from $1,500,000 in 1963 to $5 million in 1966, with a continuation at that level through 1970, in order that the Nation have the air pollution specialists which are increasingly needed.

RESEARCH CONTRACTS

Mr. FOGARTY. I notice you have $1,400,000 budgeted for research contracts. What research does this cover and why could not this be done under grants?

Mr. MACKENZIE. Primarily, we have used the research contract as a mechanism for extension of our intramural research activity.

In our total research program, we believe it desirable to take advantage of the initiative and abilities of the research people in universities and similar institutions and for this purpose we rely primarily on the research grant project proposals which are developed by them.

For our intramural activities, however, we believe we must concentrate on certain specific elements, such as the automobile exhaust problem, and for certain phases of the work where there are facilities more readily available in outside organizations than in our own, we believe that it is more efficient and can accomplish the purpose quicker by contracting for the work.

ST. LOUIS AIR POLLUTION STUDY

Mr. FOGARTY. What are you doing in connection with the St. Louis air pollution study?

Mr. MACKENZIE. This is a broad study in an important interstate area where apparently there is an acute air pollution problem which is difficult to solve because of the number of local government jurisdictions that are involved totally in the area.

For a number of years there have been some dissatisfactions with the situation in the area. In cooperation with the States of Illinois and Missouri, with the bistate agency, with St. Louis County, the city of St. Louis, and the city of East St. Louis, we have developed a project for appraising the total air pollution problem in this area and the development of a program for dealing with it.

We are hopeful that, after this project has been accomplished, appropriate arrangements can be made with local agencies for organizing a more comprehensive program that will cover the problem in the entire area.

DAMAGE AREA FROM CENTRAL SOURCE OF POLLUTION

A second purpose of this particular study is related to the long-distance travel of pollutants from large urban areas.

We have had increasing evidence that pollutional effects on vegetation, agriculture, and trees, have been occurring at distances of 100 miles or more from large sources of pollution.

Mr. FOGARTY. What are a few examples?

Mr. MACKENZIE. There are several examples of this. Increasingly there is evidence of pine blight attributable to air pollution in the mountainous areas of California, in North Carolina; there has been widespread damage to agricultural crops throughout the State of New

Jersey. Damage to tobacco in Connecticut has been attributed to pollution from the New York City metropolitan area. Damage to tobacco in southern Ontario has been associated with pollution arising in the Detroit and Cleveland areas.

Mr. Fogarty. In this St. Louis area where are the pollutants coming from?

Mr. MacKenzie. In the St. Louis area the pollutants come principally from fuel consumption, industrial activities, and the automobile concentrations in these areas.

Mr. Fogarty. And in the St. Louis area it goes out a hundred miles?

Mr. MacKenzie. Yes, sir.

Mr. Fogarty. In all directions?

Mr. MacKenzie. It depends on the direction of the prevailing winds. This will change from time to time.

Mr. Fogarty. So those people a hundred miles away should have some interest in this program, too; should they not?

Mr. MacKenzie. Yes, I would think so.

ALABAMA STATEWIDE STUDY

Mr. Fogarty. What will you do and how much is budgeted for the statewide study in Alabama?

Mr. MacKenzie. The statewide study in Alabama consists of two phases. First, we have a project which is being operated cooperatively through the University of Alabama and the Tuberculosis Society of Alabama for appraisal and definition of the degree and extent of chronic respiratory diseases in the populations in various cities in Alabama. In addition to this, directly we are carrying on an activity, in parallel with the university and tuberculosis project, for the measurements of air pollutant concentrations in the various cities where the chronic disease survey is being made. The overall purpose of the two elements of the project is, first, to obtain better information as to the prevalence of various types of chronic respiratory diseases, principally emphysema, bronchitis, and asthma; and second, to study the association of the prevalence and incidence of these chronic diseases with levels of air pollution in the areas where the investigation is being carried on. Now, the importance of this, I might illustrate by the fact that the incidence of such chronic respiratory diseases has been on the increase over the past decade or more to the extent that currently emphysema, as one example, is now the second cause for disability allowances under the old age and survivors insurance disability program; the first cause being, of course, arteriosclerotic heart disease. The second cause of such disability payments currently is emphysema.

Mr. Fogarty. Emphysema is a problem of breathing, is it not?

Mr. MacKenzie. Yes, sir.

Mr. Fogarty. Generally in older people?

Mr. MacKenzie. Usually it occurs in individuals over 50 years of age. It develops progressively.

Mr. Fogarty. It is trouble with breathing out, not in?

Mr. MacKenzie. The elasticity of the lung tissue is greatly reduced so the person has trouble expelling the breath.

Mr. Fogarty. This is the second cause of what?

Mr. MacKenzie. Disability payment under the old age and survivors insurance disability program.

Mr. FOGARTY. What is the first?

Mr. MACKENZIE. Arteriosclerotic heart disease.

Mr. FOGARTY. How much have you got budgeted for this study in Alabama?

Mr. MACKENZIE. Currently we are budgeting, in fiscal year 1963, about $148,000; in 1964 we proposed to expand this to a somewhat higher level.

Mr. FOGARTY. Are you going to be carrying out fully the recommendations of the Gross committee under this budget request for 1964?

Mr. MACKENZIE. No, sir.

Mr. FOGARTY. Because you don't have enough money?

Mr. MACKENZIE. Yes, sir.

RECOMMENDATIONS OF NATIONAL CONFERENCE ON AIR POLLUTION

Mr. FOGARTY. I am not going to take the time to go into all these recommendations made by the National Conference on Air Pollution but will you put in the record what recommendations were made by this Conference?

Mr. MACKENZIE. Surely.

Mr. FOGARTY. Are you carrying out any of these recommendations or will you be able to in 1964?

Mr. MACKENZIE. We will certainly make progress in carrying out some.

Mr. FOGARTY. Give us a statement on that Conference and the progress you expect to make regarding their recommendations.

(The statement follows:)

NATIONAL CONFERENCE ON AIR POLLUTION

A National Conference on Air Pollution was held in December 1962. The Conference was called by Surg. Gen. Luther L. Terry to provide a forum for representatives of all levels of government, industry, and the public concerned with the growing problem of air pollution in the United States. The more than 1,400 persons who participated reflected all shades of present opinion on the significance of the problem, what needs to be done about it, and how to do it. They included health officials, engineers, physicians, scientists, legislators, industry spokesmen, and representatives of labor and civic organizations.

In contrast to a previous Conference held in 1958, there was agreement that air pollution is now a national problem, rather than one limited to a few critical areas. There was virtual unanimity that the problem with respect to the health, welfare, and economy of the Nation is serious and urgent, and requires immediate and vigorous action.

Following the opening plenary sessions, which were concerned primarily with scientific, industrial, and political statesmanship in air pollution control, there were a series of panel sessions devoted to special problem areas, including motor vehicles, industrial plants and powerplants and municipal pollution sources, health considerations, and agricultural, natural resource, and economic considerations. These were followed by panel discussions on how best to apply present knowledge to pollution control through the use of measurement and monitoring, control equipment, meteorological factors, legislation and regulation, and public information and sociological know-how. Summary reports of the panel discussions were presented at concluding plenary sessions.

Although the Conference was not designed to present resolutions or recommendations for action, an apparent consensus developed which may be summarized by the following statements:

President John F. Kennedy

"It is imperative that this Nation act to preserve now, and for the years ahead, the purity of its air. The pollution of this priceless resource continues to jeopardize the economic vitality of our Nation and the health of millions of our citizens.

This fact we can neither condone nor tolerate; we can and must, instead, resolve to use every appropriate means in a concerted effort to clear the air of its burden."

Anthony J. Celebrezze, Secretary, U.S. Department of Health, Education, and Welfare

"There is no doubt that all citizens, properly informed, will be willing to pay for control measures which—not to mention the health hazards—cost far less than the dollar damages from polluted air."

"Despite the considerable progress we have made, large numbers of people in our urban areas are not now served by adequate control programs."

Luther L. Terry, Surgeon General, U.S. Public Health Service

"What troubles the air is the burden of pollutants we ask it to carry. This burden promises to become greater, ironically, in direct proportion to our success in increasing our general prosperity."

"Certainly now, when we can and do determine, by chance or by choice, the structure of our environment, we cannot blame the vagaries of nature for its defects. That time is past. We are responsible."

Senator Harrison A. Williams, New Jersey

"But more to the point, I think our goal ought to be the elimination of air pollution by the end of the sixties * * *."

"We have been trying to eliminate our ignorance for the last 6 or 7 years, and we have yet to fully face the fundamental issues, which are money and the enforcement of air pollution control."

"I think it is equally clear that if effective action is ever going to be taken, the Federal Government is going to have to exercise far greater leadership than it has so far * * *."

Congressman John E. Fogarty, Rhode Island

"The current situation must be remedied now, for time and our precious air supply are running out."

Congressman Paul F. Schenck, Ohio

"Government must do more to meet its own responsibilities in reducing vehicular pollution. At State and local levels it should take steps as needed to keep the bad pollution producers off the road. At the national level it should exert vigorous leadership in many ways."

Barry Commoner, chairman of the Committee on Science in the Promotion of Human Welfare of the American Association for the Advancement of Science

"At this moment, in some other city, a group may be meeting to consider how to provide air for the first human inhabitants of the moon. Yet, we are meeting here because we have not yet learned how to manage our lives without fouling the air that man must continue to breathe on mother earth."

John T. Middleton, director, Air Pollution Research Center, University of California

"The agricultural losses resulting from the adverse effects of all of the presently recognized pollutants have been estimated to amount to hundreds of millions of dollars a year."

Dr. Jerry McAfee, vice president, Gulf Oil Corp., Pittsburgh

"When it comes to air pollution, industry is keenly aware that there are limits beyond which the waste-absorbing capacity of a given community's atmosphere cannot be exceeded without damage to the community, and eventually to the industry itself."

Rachel Carson, author of "Silent Spring"

"It seems to me that air pollution should be viewed in the larger context to which it belongs. It is part of one of the most vital problems that confronts mankind today: how to control the spreading contamination from many sources that is rapidly causing the deterioration of our environment."

William S. Spicer, Jr., M.D., associate professor of medicine, School of Medicine, University of Maryland

"It would be a mistake to leave this conference with the impression that there is insufficient evidence for action—now. The evidence that air pollution contributes to the pathogenesis of chronic respiratory diseases is overwhelming."

James Dixon, president, Antioch College, Ohio

"* * * aggressive and intelligent air pollution public information and education activities must be viewed, not as the icing on the agency cake, not as an unnecessary frill, but as a condition of progress in the field of controlling air pollution."

Arthur S. Flemming, president, University of Oregon

"Efforts by business and industry and by State and local governments alone will not reduce, in a significant manner, the serious health hazards you and I face today. The resources and authority of the Federal Government must be used to a greater degree."

S. Smith Griswold, air pollution control officer, air pollution control district, Los Angeles

"The most important impression we can take away from this conference is the knowledge that there are existing solutions ready to apply to almost every air pollution problem."

"* * * the time approaches when few communities in this country will be free of pollution."

Howard K. Smith, American Broadcasting Co.

"I get the impression from reading the summaries of panels that the great majority * * * are for both research and application * * *. And if you want my order of priority, I'd be in favor of getting as much junk out of the air as possible now."

"Even those magical boundaries separating sovereign state from sovereign state cannot check the flow of troubled air. What's a Federal Government for, if not for problems like this?"

F. J. L. Blasingame, M.D., executive vice president, Americal Medical Association

"One of our most serious environmental health problems is air pollution. It can and should be controlled. The American Medical Association endorses the concept of local, State, and Federal joint enterprise. Local, State and industrial groups should participate to the utmost of their capacity. The Federal Government should engage in—

"(1) Responsible leadership through the Public Health Service;

"(2) Research and discovery; and

"(3) Enforcement in interstate or interjurisdictional difficulties in the manner of the successfully implemented Water Pollution Act.

"Enough has been said. Let's clear the air."

WHAT NEEDS TO BE DONE

The discussions at the National Conference on Air Pollution brought forth a public response for greater action. To translate this response into action will require, at all levels of government, a clear expression of objectives, of responsibilities, and of the degree of budgetary, legal, and moral support which will be provided to assure the clean air to which the public is entitled. The national conference showed this to be what the public wants. On the basis of the health effects research which it has conducted and supported, some of which was reported on at the conference, the Public Health Service believes this public attitude to be entirely consistent with sound public health practice.

Vigorous leadership by the Federal Government to assist in the development of State and local government programs and increased activity by industry is necessary if effective progress is to be made. To keep the problems of air pollution from getting out of hand will require an acceleration of research and development activities, technical assistance, increasing trained manpower resources, and the encouragement of cooperative activities and regional program development. Financial assistance is essential to insure adequate State and community efforts.

Strengthening of authority to control serious pollution problems is necessary, particularly where these are interstate in character. The benefits of increased knowledge about air pollution and its control can only be realized if the knowledge is applied.

PUBLIC HEALTH SERVICE EFFORTS

With regard to research, which has been the major segment of the program of the Division of Air Pollution, the Division has devoted considerable effort in clarifying research needs, through sponsorship and participation in technical meetings and symposia, conducting staff studies, and securing the advice of eminent advisory groups such as the Ad Hoc Task Group on Air Pollution Research Goals. The research programs for the Federal Government which have evolved from this combined planning and advisory activity have been reflected in the technical budgetary proposals which the Division of Air Pollution submitted for the 1964 estimates.

As noted in the preceding testimony, the conference was not designed to produce specific recommendations for action. However, an apparent consensus in several areas developed and many suggestions for increased activity were made.

The suggestions made at the conference for sharply increased national air pollution research activity covered a wide variety of activity including health effects, meteorology, atmospheric chemistry, agricultural effects and mechanisms of damage, economic studies, engineering controls, automotive emissions studies, and related research areas. The Division of Air Pollution is already engaged, to some extent, in most of these areas of activity. The research portion of the 1964 budget estimate will permit increased activity in the research grants program, by providing for the award of grants to a larger number of project applications approved for scientific merit by advisory groups. In general, these grants are for studies, in universities, of a fundamental nature. Under the direct research program of the Public Health Service, the 1964 estimates provide for some increased activity in two main areas: (*a*) potential for reduction of emissions through improved design and performance of automotive engines and equipment; and (*b*) study of the long-range transport and behavior of air pollutants, with special emphasis on pollutant travel in interurban complexes.

The conference discussions brought out the need for additional activity by State and local governments and suggested vigorous leadership by the Federal Government in assisting them through expanded technical assistance.

The estimate for the technical assistance activity will permit continuation at the 1963 level. Accordingly, no significant progress is anticipated with respect to making a dent in the increasing backlog of requests from States and communities for consultation and assistance of various types.

The increase for the training activities for 1964 will permit some progress in accelerating the supply of trained manpower, a need emphasized at the conference.

A major theme of the conference was the need for the application of knowledge through control and abatement programs. Further implementation of the viewpoints expressed at the conference with respect to acceleration of efforts nationally in actual control, will require at the Federal level additional legislation. The present administration has recommended to the Congress the types of additional legal authorities needed. Bills to provide such additional authorities are now pending in the Congress.

Mr. FOGARTY. Mr. Denton?

EMPHYSEMA

Mr. DENTON. What was that disease that was the second ground for payments for total permanent disability benefits under the old-age and survivors insurance?

Mr. MACKENZIE. The disease is emphysema.

Mr. DENTON. Is that the same as asthma?

Mr. MACKENZIE. No, sir. It is somewhat different. Asthma is a disease in which acute episodes occur to the individual, usually associated with a sensitivity to a particular protein or other type of chemical substance which contracts the respiratory passages and produces spasm, essentially, and difficulty in breathing. Emphysema is a more permanent condition in which the lung tissue has lost its elasticity and the individual has difficulty in breathing out. Oxygen absorption is greatly impaired. The difficulty primarily is caused by retention of stagnant air in the lung tissue which the person cannot expel in order to make room for new air to be taken in.

SMOKE ABATEMENT

Mr. Denton. What are you doing about smoke abatement?

Mr. MacKenzie. Well, smoke abatement is an essential element of any air pollution control program. Smoke, of course, is primarily thought of as the particulate material that is discharged from burning fuel. Ofttimes, however, it is used also to describe dust particles and similar materials that are discharged from industrial processes such as the manufacture of steel or the manufacture of pulp and paper and a great many other products.

Mr. Denton. What I am interested in is smoke abatement that comes from coal. I live in a community where they burn soft coal.

Mr. MacKenzie. Yes.

Mr. Denton. And we used to have a great deal of coal smoke, but now people burn more gas and oil and there has been a fine program of smoke abatement. And I just wondered what you have been doing in that area?

Mr. MacKenzie. There are several things that can be done to decrease emissions from combustion of fuels, principally coal. For the larger installations, there is combustion equipment available which will burn the coal with relatively high efficiency and with resultant production of only small, if any, quantities of smoke. For the smaller installations, many locations have found it expedient to require the burning of coals of lower volatility. The production of smoke apparently in home furnaces is associated with the percent volatile content of the coal. If coke or a hard coal is used, the householder can burn this more efficiently with less smoke production. There are variations in the quality of bituminous coals in this regard and a number of cities have taken this as an appropriate way of reducing smoke emissions from householder's furnaces. St. Louis has done this.

Mr. Denton. What I am trying to get at is, what has your agency been doing about it?

Mr. MacKenzie. Well, we have been providing technical assistance, essentially in connection with this particular problem. The means of reducing emissions of this kind are known to a considerable extent. There are procedures that are helpful.

Mr. Denton. I take it that research is not necessary because you do have the general knowledge of how to deal with the problem? The point is to make it known to different communities.

Mr. MacKenzie. This is primarily the case.

Mr. Denton. Do you have a program on this?

Mr. MacKenzie. Yes.

Mr. Denton. That is all.

Mr. Fogarty. Is there anything else you would like to say Doctor?

Mr. MacKenzie. No, sir.

Mr. Fogarty. Thank you very much.

We will take up "Milk, food, interstate and community sanitation."

MILK, FOOD, INTERSTATE AND COMMUNITY SANITATION

WITNESSES

WESLEY E. GILBERTSON, CHIEF, DIVISION OF ENVIRONMENTAL ENGINEERING AND FOOD PROTECTION

DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES

PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
	PUBLIC HEALTH SERVICE			
11	Personnel compensation:			
	Permanent positions	1,396	1,923	2,264
	Positions other than permanent	35	36	37
	Other personnel compensation	1	1	14
	Total personnel compensation	1,433	1,960	2,315
12	Personnel benefits	239	339	385
21	Travel and transportation of persons	224	295	300
22	Transportation of things	33	56	56
23	Rent, communications, and utilities	45	79	107
24	Printing and reproduction	50	43	43
25	Other services	36	54	54
	Services of other agencies			2
	Research contracts		55	55
	Payment to—			
	Bureau of State Services management fund	156	387	428
	National Institutes of Health management fund	41	56	66
26	Supplies and materials	64	107	114
31	Equipment	62	385	64
32	Lands and structures	27		
41	Grants, subsidies, and contributions	3,310	3,924	5,090
	Total, Public Health Service	5,719	7,741	9,079
	ALLOCATION TO GENERAL SERVICES ADMINISTRATION			
24	Printing and reproduction	6		
25	Other services	127	30	
32	Lands and structures	1,508		
	Total, General Services Administration	1,641	30	
	Total obligations	7,360	7,771	9,079

Personnel summary

	1962 actual	1963 estimate	1964 estimate
PUBLIC HEALTH SERVICE			
Total number of permanent positions	250	345	356
Full-time equivalent of other positions	5	6	6
Average number of all employees	215	293	334
Number of employees at end of year	238	362	373
Average GS grade	7.2	7.3	7.4
Average GS salary	$6,290	$6,538	$6,608
Average salary of ungraded positions		$3,940	$3,940

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Research grants	3,310	3,924	5,090
2. Research, training, and technical services	2,479	5,384	3,989
Total program costs, funded [1]	5,789	9,308	9,079
Change in selected resources [2]	1,571	−1,537	
Total obligations	7,360	7,771	9,079
Financing:			
Comparative transfers to other accounts		757	
Unobligated balance lapsing	62		
New obligational authority	7,422	8,528	9,079
New obligational authority:			
Appropriation	7,424	8,536	9,079
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−2	−8	
Appropriation (adjusted)	7,422	8,528	9,079

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[1] Includes capital outlay as follows: 1962, $41,000; 1963, $1,873,000; 1964, $64,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $54,000 (1962 adjustments, $21,000); 1962, $1,646,000; 1963, $109,000; 1964, $109,000.

Mr. FOGARTY. Mr. Gilbertson, we are glad to have you with us again. You may proceed with your statement.

GENERAL STATEMENT

Mr. GILBERTSON. Mr. Chairman and members of the committee, I have a longer statement which, with your permission, I would like to file for the record. This discusses more fully the urgent and changing problems of the environment.

Mr. FOGARTY. We will place it in the record.

(The statement follows:)

Mr. Chairman and members of the committee, the funds in this appropriation provide for a variety of activities in the traditional environmental sanitation programs. They include conducting research, investigations, demonstrations, and training; supporting extramural research through grants; providing consultation and technical services to other Federal, State, interstate, and local agencies, and to private industries and organizations; carrying out statutory responsibilities for control of environmental sanitation on interstate carriers; and developing program guides, model codes, ordinances, and standards. They are performed in the exercise of our responsibilities for milk and food, drinking water supply, solid wastes disposal, assistance on urban environmental planning as it relates to health, and control of environmental sanitation on interstate carriers—airlines, railroads buses, and vessels.

We are actively engaged in protection of the health of the public through our milk, food, and shellfish sanitation activities by research and development and by assisting the States and municipalities in the formulation, conduct, and maintenance of effective programs for the control of disease transmission through milk, food, and shellfish. Consumer protection programs of States and communities are improved and strengthened by new knowledge made readily available by the Division of Environmental Engineering and Food Protection.

The "Public Health Service Drinking Water Standards" were revised and published last year. The 1964 budget includes an increase for implementing these standards.

RESEARCH GRANTS

The mission of our research grants program is to utilize the competencies at universities and similar nonprofit research institutions in the study of problems relating to our program responsibilities. Examples of the research projects we support are as follows: Ecology of paralytic shellfish toxicity in the State of Washington; toxicity methodology for chemicals in foods; detergents as cleansers of food-handling equipment; quantitation of bacteria in precooked frozen foods;

pesticide residue determinations by gas chromatography; bacterial contamination from hospital solid wastes; mathematical simulation of refuse collection and disposal systems; environmental engineering policies and urban development; mastitis screening tests for mixed-herd milk; ultra-high-temperatures effects on bacterial spores; and studies on virus contamination of foods.

The increase of $1,166,000 will support approximately 15 additional new grant projects and will finance continuation of all active grants approved in prior years. The budget also provides additional support for review and approval activities in connection with these grants.

SPECIAL ENGINEERING SERVICES

Technical assistance continues to be sought by State and local health and public works agencies and professional organizations in such areas as solid wastes collection and disposal, plumbing, community and recreation sanitation, migratory labor housing and camps, swimming pools and bathing places, individual water supply and sewage disposal, and other miscellaneous problems requiring the application of sanitation principles in order to effectively protect the health of the individual and community.

The production or updating of technical manuals, guides, bulletins, standards, criteria, and exhibits in the several environmental health and sanitation areas provide an important tool for local health departments.

"The Manual of Individual Water Supply Systems," revised 1962; "National Plumbing Code Recommendations"; "Recommended Standards for Sanitary Landfill Operations"; "Environmental Engineering for the School"; and the proposed new manual on recreational area sanitation, are examples of technical accomplishments designed to fulfill the widespread demand for current recommendations of the Public Health Service.

In 1963, an expansion of solid-wastes engineering activities was directed to increased technical assistance to States and initiation of data collection, standards development, and assistance in two major metropolitan centers in planning for countywide and regionwide refuse collection and disposal

INTERSTATE CARRIER SANITATION

The Public Health Service "Drinking Water Standards" which govern the quality of interstate carrier water supplies were revised and published in April 1962. Currently there are 850 sources of water supplies which serve an estimated 1.5 million passengers traveling on interstate carriers each day, as well as 85 million people residing in the communities for which the supplies are the public source of drinking water. Incorporated in the 1962 "standards" for the first time are limits on detergents, organic chemicals, radiochemicals, and certain trace elements.

The increase of $85,000 in the water supply activity will be used to increase the number of joint surveys of interstate carrier water supplies with State health department representatives. Investigations of this nature over the past 2 years have shown the need for improvements in many of the supplies. Cases of undesirable cross-connections, lack of adequate disinfection procedures, and poor plant conditions have been found to exist frequently. Field studies will be instituted to determine the role played by water supply in the increasing spread of infectious hepatitis. Other field studies will deal with the subject of trace elements in water supplies and their effect upon such diseases as cancer, arthritis, and heart congestion. It has been found necessary to gather information for the current updating of the "Drinking Water Standards" in such subjects as the occurrences of beryllium in the wastes discharged from rocket-testing sites. These field study and assistance projects will have the effect of maintaining the interstate carrier water supply network as well as the country's water supplies generally in a condition which will keep pace with the advances in technology.

Industrial growth in significant areas affects our water supply program. For example, expansion of shipyard facilities causes an increasing problem in controlling water quality on interstate carrier supplies due to cross-connections between potable water and harbor or river water. In September 1962 over 700 cases of gastroenteritis occurred among workers in a shipyard in Camden, N.J. This disease outbreak was caused by an improperly designed cross-connection and illustrates this hazard and the necessity of constant surveillance.

The Public Health Service has the continuing responsibility of protecting the health of the Nation's traveling public through surveillance of interstate carrier food sources and services and waste disposal. Annually, over 600 million passengers are carried on interstate conveyances. Surveillance of the sanitation problems is required in the servicing of over 5,800 conveyances and catering establishments servicing them. In 1963, sanitary inspections were made of approximately 2,400 vessels, railroad dining cars, and commissary or catering points for airlines.

One airline has already completely discarded its old method of feeding passengers and has switched to precooked frozen meals which are reheated on the plane. This has brought about a complete redesign of galley equipment. New and faster aircraft will spend less time in stopovers, creating problems in servicing the plane with water, removing wastes, loading food, and preparing and servicing this food on short flights. These trends indicate an increase in problems relating to water supply, waste disposal, and food sanitation brought about by these changes in equipment.

ENVIRONMENTAL HEALTH PLANNING FOR METROPOLITAN AREAS

Urbanization and industrialization of the United States continue to augment and aggravate environmental factors affecting health. Because of the wide range of these environmental problems, which are often interrelated and made more difficult to solve because of fragmented and overlapping local political jurisdictions, it has been necessary to evolve appropriate comprehensive approaches to environmental health assessment and planning. Although comprehensive physical planning has been carried on in many areas, environmental health planning in urban communities has not been given adequate consideration. An environmental health plan should consider water supply, sewerage, air pollution, solid-waste collection and disposal, housing, radiation, flood control, land usage, and general sanitation.

There is a growing recognition on the part of health authorities at State and local levels of the desirability and need for more active participation by health agencies in the field of metropolitan planning for urban health. Organized urban planning groups continue to recognize that environmental health needs should be considered in comprehensive plans for the future. Smaller urban areas lack the expert knowledge necessary for the solution of their immediate and long-range environmental health problems.

We are seeking to meet the need for more effective planning through fostering the use of the "Environmental Health Planning Guide" developed by the Public Health Service. This guide serves as a useful mechanism to evaluate the current status of environmental health activities, and it has been used successfully in eight communities. There is a continuing demand by State and local health departments for collaborative studies with the Public Health Service, utilizing the techniques outlined in the "Guide."

FOOD SANITATION

Effecting adequate protection of the foods we eat continues to be one of the basic and most challenging problems facing State and local health agencies at the present time. Despite the progress which has been made in controlling foodborne illnesses, outbreaks continue to occur at an alarming frequency. It has been estimated that over 1 million cases of foodborne illness occur annually in the United States. Also of concern is the frequency with which outbreaks of gastroenteritis of undetermined etiology are reported. In addition, rapid changes in technology in a dynamic food industry continue to introduce new and complex problems requiring public health evaluation. The increasing potential for chemical, microbiological, and radiological contaminants of food presents problems with both acute and chronic public health implications.

Continued efforts in the effective application of known food protection measures, and the development of measures designed to cope with both new and unresolved public health problems are essential to reducing the current incidence of foodborne illness. To this end, improved methods for the detection and identification of physical and biological contaminants in food are being developed. Adequate sanitary control measures must be developed to cope with current and new food processing and preparation techniques, handling methods, and distribution procedures.

Issuance of the "Food Service Sanitation Manual" has caused an increase in the number of State and local health agencies' requests for seminars to explain the content of this manual. Projects are being designed to demonstrate field application of the technical and administrative provisions of the new ordinances and codes. A new evaluation procedure is being developed and will be demonstrated.

MILK SANITATION

In a leadership role, the Public Health Service actively seeks resolution of milk sanitation problems through research and field investigations of new milk sanitation processes and products having public health significance.

Designed to provide State and local authorities with reliable information on the sanitary quality of milk and milk products in interstate commerce, the milk sanitation program provides for a voluntary certification system which is operated by the States, with the full support of the dairy industry, and with checks and balances responsibility, a function of the Public Health Service. This is a good example of Federal, State, and industry cooperation in the resolution of environmental health problems of mutual concern. After a decade of operation, this voluntary cooperative activity continues to grow and gain national stature. The January 1, 1963, list of certified interstate milk shippers includes the names and milk sanitation ratings of 890 shippers (more than a fivefold increase in number of shippers in 10 years) which are located in 42 States and the District of Columbia. Approximately 10 billion pounds of milk, valued at almost $500 million, moved in interstate commerce under this program in 1962.

SHELLFISH SANITATION

Two shellfish sanitation research centers are being constructed with funds provided in the 1962 appropriation. The Dauphin Island, Ala., laboratory is scheduled to be ready for operation in May of 1963, and the Kingston, R.I., laboratory early in fiscal year 1964. Staffing is progressing satisfactorily, with commitments made for over half the 96 positions authorized in 1963. Temporary office and laboratory space has been made available in the vicinity of each of these centers, and research personnel assigned there are initiating studies to be continued at the centers. Funds provided in 1963 made possible the recruitment of this staffing, and the purchase of specialized marine and research equipment. In 1964, the funds requested will provide for the full year operation of the two laboratories.

Examples of research to be undertaken in these laboratories are as follows: depuration studies of oysters and clams; the ecology of paralytic shellfish poison along the Maine seacoast; studies on the microbiology, including virology, of the shellfish estuaries in the South Atlantic and Gulf of Mexico areas directed toward the development of a better understanding of pollution indexes; the presence of industrial wastes, insecticides, and other chemicals in commercial shellfish species; sanitation problems peculiar to the crab and scallop fisheries; and a study to determine the presence of natural occurring antibiotics in shellfish.

TRAINING

Environmental engineering and food protection training programs at the Taft Sanitary Engineering Center and courses at field locations are conducted in response to needs expressed by State and local health agencies. Conducting courses at field locations has been particularly emphasized.

Requests have been received from groups within 26 States to conduct courses in environmental health planning in metropolitan areas. We shall assist the State of California, for example, to conduct training courses in a number of locations within that State. State level interest in this project will stimulate planning for environmental health facilities and services at the community level and will create additional interest among other States.

During 1964, our training program at the sanitary engineering center will continue at the same level. In addition, we will continue to conduct training in field locations in response to requests by State and local agencies.

DRINKING WATER STANDARDS

Mr. GILBERTSON. Your committee report, last year, pointed out that we should pursue, vigorously, the planned work on public health hazards due to drinking water.

In 1964, we shall proceed with this activity.

The new Public Health Service drinking water standards which were recently issued, include, for the first time, limitations on gross organic chemicals (such as pesticides and certain wastes) and radioactivity.

Beginning as long as 3 years ago, we convened groups of experts to evaluate and crystallize technical views on these controversial and often alarming subjects.

From the views of these groups, the new standards for drinking water supply were prepared.

Our interstate carrier estimate for 1964 includes an increase of $85,000 to initiate the important application phase of this program.

We shall be working cooperatively with State and local health officials, sanitary engineers, and the waterworks industry to implement these standards.

We shall also continue our joint studies with the National Institutes of Health on the relationships of drinking water to chronic diseases.

SHELLFISH SANITATION

In 1962, the Congress provided funds and directed the establishment of two shellfish sanitation research centers, one on the east coast and one on the gulf coast.

Construction of these centers is now progressing rapidly.

Resources are available this fiscal year to initiate staffing and to purchase special equipment.

Recruitment of professional and scientific personnel is moving ahead.

Continuing reports of illness problems associated with shellfish indicate the need for prompt implementation of the research programs.

To do this, our request includes $237,300 to place this staff on a full year basis.

VIRUS TRANSMISSION BY FOOD

Transmission of virus diseases by food needs continual research attention. There are difficult and unanswered questions facing public health agencies and the food industry.

For example, after having infectious hepatitis, how many people remain carriers and "shedders" of the virus?

Or, should previous cases be excluded from occupations that involve food handling?

Just about 1 month ago, we sponsored a conference of experts on viruses and rickettsiae in foods. They pointed out, among other things, that outbreaks of infectious disease are occurring for which no causative agent has been found.

We are now working on a small, but specially designed laboratory at the sanitary engineering center in which studies on viruses in milk and ultra-high temperature, "split-second" processing methods can be conducted.

When this laboratory unit becomes fully operational, we believe that it will provide information needed by State and local health departments in the control of virus-borne diseases.

Mr. Chairman, in this short summary, I will not elaborate further on our direct activities. I might merely mention some of the continuing programs such as:

The effects of extremely high temperatures on bacterial spores; investigation of solid waste collection and disposal problems through mathematical simulation; evaluation of environmental engineering practices and urban development; and virus contamination of foods.

Mr. Chairman, I shall be glad to answer any questions the committee may have.

Mr. Fogarty. Thank you, Mr. Gilbertson.

INCREASE REQUESTED FOR 1964

The appropriation for 1963, for the same activities included in the budget for 1964, is $7,771,000 and the request for 1964 is $9,079,000, an increase of $1,308,000 and 11 positions.

Mr. Gilbertson. That is correct.

Mr. Fogarty. You are absorbing all pay costs and similar mandatory costs in 1963?

Mr. Gilbertson. That is true, in essence.

Mr. Bersano. We are absorbing $79,500.

INTERSTATE MILK CERTIFICATION PROGRAM

Mr. Fogarty. In the report last year the committee said it would expect a more thorough job to be done in the interstate milk certification program.

What have you done in this regard?

Mr. Gilbertson. Well, in the milk certification program we are moving ahead. We are increasing our activity this year in terms of State program evaluations.

We have accomplished something like 50 additional check ratings of interstate milk shippers, which is, in essence, about 20 to 25 percent increased activity in that area.

We have, however, found that we are encountering an unexpected increase in the number of shippers and in the number of States that are interested in entering the program.

So the workload is also going up. In general, however, this year it looks like we will approximately meet the Federal responsibility and that is what the committee directed.

ADDITIONAL FUNDS NEEDED FOR ADEQUATE EVALUATIONS

Mr. Fogarty. You say on page 47 of the justification that you are going to provide "as nearly as possible" an adequate number of evaluations.

That does not sound very encouraging—to provide as nearly as possible an adequate number of evaluations. What does that mean?

Mr. Gilbertson. The reference there is to the fact that under the interstate milk shipment program a standard of operations has been set up—agreed to by the participating parties of the total program, which consists of the States, the industry, and the Federal Government. In this program we agree to carry on at least a minimum of evaluations of State programs, including a required number of check ratings of the sources. The reference here is that we hope to meet that standard during this year.

Mr. Fogarty. Suppose we leave out "as nearly as possible" and say, "to provide an adequate number of evaluations."

How much more money would you need?

Mr. Gilbertson. In fiscal 1964?

Mr. Fogarty. Yes.

Mr. GILBERTSON. As I see it, the primary problem is that which we will have to meet that is not covered under the present estimates. This is due to the workload increase which has occurred since these estimates were prepared and which we are now expecting will be a continuing increase during the coming year.

Mr. FOGARTY. How much does that amount to?

Mr. GILBERTSON. Well, we are expecting at least a 10 percent increase in the number of shippers participating and I think probably something in the neighborhood of 3 or 4 more States. So this would probably mean another 20 percent workload increase.

Mr. FOGARTY. In dollars how much?

Mr. GILBERTSON. Let me see if I can give you a——

Mr. FOGARTY. Supply it for the record.

Mr. GILBERTSON. All right.

(The information follows:)

WORKLOAD INCREASE ON INTERSTATE MILK SHIPPER PROGRAM AND EFFECT OF INCREASE

It is estimated that in 1964, a total increase of $80,000 and 8 positions would be necessary for the PHS to meet its responsibilities in the expanding Cooperative State-PHS program for the certification of interstate milk shippers. Personnel would be assigned to both headquarters and regional offices and would provide additional manpower for (*a*) certification of State rating officers, (*b*) certification of State, local, and private milk sanitation laboratories, (*c*) evaluation of State milk sanitation programs, and (*d*) check ratings of the work of the State personnel.

During 1962, the number of shippers requiring surveillance increased from 794 to 890, and the number of dairy farms requiring surveillance rose from approximately 120,000 to 136,000. On the basis of present participation, over 9 billion pounds of milk will be shipped under the program this year. In order to meet the Federal responsibilities in the cooperative program, the Service must certify additional State rating officers; increase the number of evaluations of State programs; certify additional State, local, and private milk sanitation laboratories; and increase the number of check ratings required to maintain the validity of the program. In addition to a general rise in participation in many parts of the Nation, an unusually large number of requests has been received from the New England States for training and certification of State milk sanitation rating officers.

By the end of 1964, it is anticipated that at least 44 States and the District of Columbia will be participating in the IMS program. It is estimated that 1,060 shippers will be included on the list of "Sanitation Compliance Ratings of Interstate Milk Shippers" published quarterly by the Public Health Service. These shippers will, in turn, receive milk from approximately 148,000 grade A dairy farms. It is further anticipated that 20 States milk sanitation program evaluations will be required during 1964. Certification of State, local, and private laboratories; certification of milk sanitation rating officers; and check ratings of new and existing shippers, all of which are functions of the Public Health Service, will also need to be increased correspondingly throughout the country.

The combined effect of these developments is estimated to result in an increase in the Federal workload of approximately 20 percent.

CONSTRUCTION OF SHELLFISH SANITATION CENTERS

Mr. FOGARTY. How are you progressing with the two shellfish sanitation research centers?

Mr. GILBERTSON. The construction on these two centers is progressing satisfactorily.

The project on the Narragansett Bay encountered some difficulties due to foundation troubles which has now been overcome, although I believe it set them back. In addition, the weather problem set them back something like 3 weeks.

We now anticipate completion of that project in August. The one on the gulf coast will be done in May. So the construction of these two projects seems to be moving along in good order.

RESEARCH GRANTS PROGRAM INCREASE

Mr. Fogarty. Almost all of your increase is for research grants, and review and approval of grants, a total of $1,203,000.

It looks like you did a little better than the others. That will actually allow some expansion from 42 new grants in 1963 to 57 in 1964. It is not much but why is this program being treated a little bit better than the rest?

Mr. Gilbertson. It would be difficult for me to answer that question, except that there are, of course, a wider number of subareas included in the research grants that are financed under this particular appropriation, including those that relate to a number of types of environmental stresses that are not otherwise included in the other research grants areas. It provides for research on such environmental engineering problems as solid wastes collection and disposal, also studies relating to food-borne hazards, shellfish sanitation, and so forth.

RESEARCH RESULTS

Mr. Fogarty. Can you give us some examples of worthwhile results from this kind of research?

Mr. Gilbertson. Yes, sir. During the past year or so we have had very excellent results from some studies. For example, there is a project in the area of determining how best to utilize the capabilities of the milk industry in the overall program of quality and sanitation control. This has been an administrative problem for many years. How can the health department and the industry efforts be more satisfactorily supplementary—each to the other.

Through a study at the University of Minnesota, in cooperation with the Twin City Milk Producers Association and with the Minneapolis City Health Department, we see a pattern emerging which looks like it will be useful on a nationwide basis. In the more technical areas, some of the studies relating to paralytic toxins found in shellfish and other marine food products have been extremely important because these substances have unfortunately prevented the use of some very important marine food sources. As we find out not only more about the poisons themselves, but also why they occur and under what environmental conditions they develop and how we can detect them, we can more safely use these products.

SHELLFISH SANITATION AGREEMENT WITH JAPAN

Mr. Fogarty. I notice on page 59 you have recently entered into a shellfish sanitation agreement with Japan. What problems have you had and what does this agreement provide for?

Do you have any other such agreements with other countries?

Mr. Gilbertson. First, with reference to the problems under the Japanese agreement, so far we have had no particular problems.

Basically, the arrangement is similar to the domestic program.

Mr. FOGARTY. I mean problems leading up to the agreement.

Mr. GILBERTSON. There were a number of problems that led up to the agreement. The present situation in the United States is that the States will accept for local use and consumption only shellfish that is certified under the voluntary cooperative program.

Since the Japanese shellfish were not entering under that certification program, nothing was known of the sanitary quality and safety of the product shipped from Japan. Therefore the shipments were widely embargoed in the United States by the States.

This caused a great deal of concern because of the adverse effects between the two countries in terms of international trade relationships. In addition it caused a loss to some American business houses which had entered into contracts to buy Japanese products.

The basis of the United States-Japanese agreement is identical, for all intents and purposes, with the international agreement which has been in existence between the United States and Canada for a good many years. This simply says that the foreign and domestic products must be evaluated under the same basic sanitary criteria. These criteria relate to the quality of the growing water, the quality of the product itself, and the handling, shipment, refrigeration, and so forth.

The only other agreement that now exists is the one with Canada. However, there have been several other countries that have inquired of us as to whether such agreements could be set up.

RELATIONSHIPS BETWEEN PHS AND FOOD AND DRUG ADMINISTRATION

Mr. FOGARTY. Since your activities are closely allied with some of the activities of the Food and Drug Administration, the question of duplication frequently arises.

Will you tell us just briefly what the difference is and then place a more detailed statement in the record?

Mr. GILBERTSON. Yes, sir.

The Food and Drug Administration has responsibility for carrying out the provisions of the Food, Drug, and Cosmetic Act.

This includes certain activities such as misbranding, adulteration, labeling, economic cheats, and so forth.

The basic mission of the Public Health Service, of course, is to protect man through the prevention of disease and other illnesses. In the food protection field, our primary emphasis is, in addition to research, to work on the preventive aspect of the problem and to assist States and communities in developing their programs.

This is done through formulation of technical guides, administrative criteria, manuals, training, and demonstrations.

(The more detailed statement, requested above, follows:)

RELATIONSHIPS BETWEEN THE PUBLIC HEALTH SERVICE (PHS) AND THE FOOD AND DRUG ADMINISTRATION (FDA) IN THE FIELD OF FOOD PROTECTION

The primary basis for distinguishing the contributions of PHS and FDA to food protection is derived from their legal responsibilities. As the principal Federal health agency, PHS has an obligation to assist the State and local health organizations in the prevention and control of foodborne illnesses, as well as all other impairments of health. FDA is charged with enforcement of laws against adulteration, misbranding, or other forms of fraud involving foods in interstate commerce. The activities necessary to discharge these food protection responsibilities are so different that the two agencies approach their problems from quite diverse viewpoints.

Typically, PHS establishes cooperative programs with health agencies and interested industry groups to (*a*) gather factual information through research and field investigations, (*b*) develop preventive measures, and (*c*) assist various State and local groups in applying uniform methods and criteria to the problem at hand. Well-known examples of this type are the interstate milk shipper program, and the shellfish certification program. Participation in these activities is voluntary, but they have proved to be effective devices for the public as well as the industries concerned.

PHS does not engage directly in broad regulatory programs in the food field, except for the control of food sanitation on interstate carriers. Instead, it depends mainly on factfinding studies, recommended manuals of guidance, consultation, technical assistance, and training to achieve its food protection goal of disease prevention through State and local control by Government and industry. Where interstate enforcement problems have been encountered by PHS in conducting its technical assistance and voluntary certification programs, the participation of FDA has been requested, as was done during the recent outbreak of infectious hepatitis resulting from marketing of sewage-polluted shellfish.

PHS places much emphasis on scientific studies directed toward the continuous improvement, evaluation, and uniform application of methods. Methods developed by PHS are submitted to other laboratories for comparative evaluation before being advocated for official use. Reference services are also provided by which other laboratories can evaluate their performance of standards methods. For example, split milk samples are sent annually to all central State milk laboratories for comparative microbiological and chemical examination. Members of the SEC research staff have performed similar functions by serving as referees for the Association of Official Agricultural Chemists. In addition, much effort has been devoted to helping the American Public Health Association prepare its several volumes on "Standard Methods for the Examination of Dairy Products," "Recommended Methods for the Examination of Food," and "Recommended Methods for the Examination of Shellfish and Shellfish Waters."

The help of the Public Health Service has been sought by several organizations, including the National Academy of Sciences, National Research Council, Association of Food and Drug Officials of the United States, National Association of Frozen Food Packers, and the International Association of Microbiological Socieities, in the formulation of standards for foods. When agreed upon, such standards are promulgated by the sponsoring groups.

PHS has a broad interest in and responsibility for the development of basic knowledge concerning food problems of importance to health. To this end, it supports both intramural research and an extramural research grants program. The results serve to create a continuing flow of information for solution of practical problems and to improve understanding about the contribution of foods to the total impact of the environment on men. These research findings are all available to FDA.

In implementing its statutory responsibility to assist the States, PHS utilizes not only grants for research but also for health services, and training. Much direct technical assistance is afforded the State and local health agencies, as well as industry, through the nine HEW regional offices which furnish consultation, technical information, and specialized training on food protection.

The consultants who participated in the Food Protection Task Group meeting on July 5 and 6, 1962, saw little likelihood that PHS would infringe upon FDA responsibilities if the PHS food protection program were developed in accordance with the recommendations and intentions of the Gross committee report on "Environmental Health Problems" (PHS publication No. 908, 1962). The latter report included the following statements:

"The enforcement efforts of FDA against adulteration and misbranding of foods in interstate commerce are, in fact, strengthened by the collateral efforts of PHS to support intrastate and local food protection programs. The differences in responsibilities and objectives of the two agencies are effective deterrents to duplication, even in research, where both frequently work on different facets of the same problem to the mutual advantage of all concerned. Additional work is necessary (*a*) to make these relationships more effective in areas above and beyond the present scope of the milk and food program, (*b*) to keep pace with the rapid development in food science and technology which have been and are continuing to be made, and (*c*) to keep abreast of the needs, requirements and desires of the American people.

"The food industries and governmental enforcement agencies are actively engaged in the commercial application of new processes and in determining compliance of finished products with existing standards. They urgently need the active participation and leadership of the Public Health Service in a national program to develop additional information, methods and criteria applicable to new products which may be used to protect the health and welfare of the consumer.

"The Service has worked for many years with the States and localities as well as other Federal agencies and industry, and is in a key position to integrate the interests of the producers, processors, distributors and consumers of food. Such preventive action is essential to the maintenance of our high health status in the face of revolutionary changes in food technology and eating habits of the population."

COORDINATION WITH FOOD AND DRUG ADMINISTRATION

Mr. GILBERTSON. Coordination with the Food and Drug Administration is effected through a variety of means.

First, they are represented on our various advisory groups. During the past year we have issued a new food service sanitation manual which is a basic guide for food service and preparation. The Food and Drug Administration was represented on this advisory committee as they are on many advisory committees.

Where Federal seizure powers are involved on interstate commerce, the Food and Drug Administration is advised so that they can take action if they feel it is necessary.

Our strong emphasis in the Public Health Service is on strengthening the preventive aspects of the program. We do this not only through our own efforts, but by working closely with the cities, the States, and with the food industry itself. This has been our work over the years.

SPECIAL TASK FORCE ON FOOD PROTECTION

In connection with the Gross committee report, the Special Task Force on Food Protection reviewed the activities which we are carrying out and which Food and Drug is carrying out. I believe the Gross committee group was quite familiar with the potentialities, the responsibilities, and the roles of both of the two groups. As a matter of fact, after the Gross committee report came out, we reconvened the special group on food protection last July. We invited the Food and Drug to participate in this meeting. I would think, Mr. Chairman, that perhaps in partial response to your question on matters to be placed in the record, that perhaps this document and some of the recommendations might be useful.

Mr. FOGARTY. All right, we will put the document in the record.

(The document follows:)

EXCERPTS FROM REPORT OF THE FOOD PROTECTION TASK GROUP MEETING SPONSORED BY THE DIVISION OF ENVIRONMENTAL ENGINEERING AND FOOD PROTECTION, JULY 5-6, 1962

PURPOSE

The task group met to review the Division's proposed food protection program for fiscal year 1963-64 and to develop long-range plans for implementation of the Milk and Food Subcommittee report to the Committee on Environmental Health Problems (PHS Publication No. 908, 1962). The consultants who wrote this report were invited to discuss with representatives of PHS and FDA the problems associated with carrying out of the Subcommittee's recommendations and to suggest the priorities which the Public Health Service should give to various activities in this area of environmental health.

REVIEW OF AGENDA

At the beginning of the meeting the Chairman reviewed the agenda and asked the consultants whether they wished to suggest changes, particularly with respect to emphasis on points of special interest to them. It was agreed that the topics covered by the agenda were pertinent and that special attention should be given to the following questions:

1. Where does the Public Health Service stand with respect to support of a food protection program such as has been proposed in report of the Committee for Environmental Health Problems?
2. What relationship should be developed between PHS and FDA, as well as other Federal agencies, in the field of food protection?
3. Should closer cooperation be developed between the Division of Environmental Engineering and Food Protection and medically oriented elements of the Service, such as NIH and CDC?

Preliminary discussion of these questions brought out the need for the PHS to become more active in the prevention of foodborne disease, particularly with respect to (*a*) improved reporting of outbreaks, (*b*) investigation of fundamental cause and effect of relationships which involve food or food contaminants, (*c*) development and application of improved methodology for examination of foods. (*d*) recommendation of criteria necessary for consumer protection from unsanitary foods, and (*e*) creation of a backlog of basic data on foods by means of research and surveys oriented to potential health problems. The point was made that these public health functions are not now being performed adequately by PHS or any other organization, and that they are responsibilities of the Service which cannot be discharged effectively by the Federal agencies concerned primarily with other aspects of the food supply.

Agencies concerned with adulteration, misbranding, production, processing, and marketing also have need for research in support of their programs, but the viewpoints and objectives of each are so different that the likelihood of undesirable duplication seems very remote. The important consideration is to provide sufficient resources, favorable working environments, and proper coordinating mechanisms for these several agencies to achieve timely solutions of problems raised by the tremendously accelerated technological changes in food producing, processing, and serving industries. The Public Health Service has a special responsibility to inform the medical profession and industry about the public health implications of these problems and to assist both governmental agencies and private enterprise in the prevention of adverse health effects involving foods. These functions are necessary for the protection of the U.S. food supply, and they do not appear to infringe upon the primary responsibilities of other Federal agencies, such as FDA or USDA.

PROBLEMS OF DEVELOPING A FOOD PROTECTION PROGRAM IN PHS

(By Dr. J. M. Hundley)

The Office of the Surgeon General recognizes that PHS has fallen behind in the field of food protection. No simple solution is apparent which will correct this deficiency, but circumstances require that action be taken soon. There is growing dissatisfaction in Congress concerning Federal activities in the food field and a number of proposals, related especially to nutrition, have been made by various groups; e.g., the USDA is making plans to develop an Institute of Human Nutrition.

Within PHS, the Institute of Arthritis and Metabolic Diseases has been the traditional home of nutrition research, and will, no doubt, continue to be active in this area under the leadership of Dr. G. Donald Whedow who has recently been appointed to succeed Dr. Floyd Daft. This group is oriented primarily to fundamental studies and should not be depended upon for the practical applications needed to implement the programs of the Division of Environmental Engineering and Food Protection.

The prospect of developing an Environmental Health Center creates an opportunity to strengthen food protection activities within the Service. One difficulty with this field is the determination of proper roles for the numerous Federal agencies involved. For example, the FDA Citizens' Advisory Committee has been critical of PHS–FDA relationships. No doubt some "gray areas" of common interest do exist and probably cannot be eliminated, but they are, in reality, small by comparison with the following major functions:

PHS: Prevention of foodborne illness and assistance with local control.

FDA: Enforcement of laws against adulteration and misbranding of foods in interstate commerce.

FDA–PHS Relationships

(By Mr. Kenneth Kirk, Dr. George Harvey, and Dr. R. J. Anderson)

The "Milk and Food" section of the Gross report has been misinterpreted by some as implying criticism of FDA and proposing that PHS take over its functions. The principal difficulty in reaching a common understanding of the committee's recommendations relates to the various definitions of such terms as "control," "surveillance," and "standards," which have been interpreted differently by readers according to their backgrounds and interests.

The intent of the consultants who prepared the report was to recommend for PHS a broad factfinding role which would provide new information and leadership for the prevention of illness attributable to foods. Their objective was to strengthen necessary food protection activities of PHS in ways that would complement, rather than infringe upon, the enforcement activities of FDA. They recognized the urgent need for more food research by both agencies in order to sustain the vitality in their respective functions.

The Citizens Advisory Committee is making a study which will include consideration of FDA scientific activities. In order that its report may not contribute further to the misunderstanding of PHS–FDA relationships, it is important that the committee be given greater insight regarding the basis for participation of PHS in food protection. Discussions between key representatives of PHS and FDA also appear necessary to coordinate and strengthen their relationships. Both agencies have important responsibilities and special capabilities for food protection. Their immediate need is to agree upon a basis for getting the job done.

Problems of Food Protection

From the task group's special knowledge of commercial developments and governmental activities related to foods, it is evident that the technology of production, processing, and distribution has grown far too fast for food protection principles and practices to keep pace in terms of public health. The problems have increased greatly in scope and complexity due to the rapid introduction of new commercially prepared products. Many of these contain ingredients of worldwide origin that are produced with the aid of agricultural chemicals, blended and supplemented with additives, preserved by novel processes, packaged in unconventional containers, distributed widely, and offered to the consumer in convenient, attractive, but unfamiliar forms. Such products have presented and will continue to introduce a variety of health hazards about which more information is needed by industry and the health agencies in order to protect the public.

Additional health problems arise from deficiencies of information regarding the preparation of foods in private homes, as well as the increased scale of preparation in institutions, public eating places, and the special facilities required to serve precooked meals in catering, vending, or transportation operations. Individual bouts of gastroenteritis are a commonplace fact of life which, though admitted privately, are seldom reported officially unless the victims seek medical attention. On the basis of laboratory evidence and epidemiological investigations, there is no doubt that a great many of these illnesses result from foodborne microbial agents. The better known agents producing toxins in foods are the various types of *Clostridium botulinum* and enterotoxigenic strains of *Staphylococcus aureus*. Among the living organisms causing infection, are more than 700 serotypes of Salmonella. Many other bacteria such as *Clostridium perfringens*, *Bacillus cereus*, and certain enterococci have been reported in outbreaks of a milder type of gastroenteritis, and their role in causing illness is not understood. Other bacteria have been associated with foodborne illness in foreign countries (*Pseudomonas enteritidis* in Japan). There is reason to think that some viruses found in the intestinal tract may be spread through food and give rise to illness. Knowledge in this field is lacking, and whether the bacterial criteria for fecal contamination of food apply to viruses is unknown. Foods contaminated with infectious hepatitis virus have been found to disseminate this disease. It is, therefore, obvious that all of the microbial agents responsible for foodborne diseases have not been discovered. The causes of most food-related illnesses are not determined, and available knowledge is insufficient, from a practical standpoint, to prevent their recurrence.

Studies on the intake and retention of heavy metals, chlorinated hydrocarbons, radioactive strontium, and other toxic chemicals have demonstrated convincingly that foods are a major factor in the exposure of the population to these manmade environmental insults. The more subtle health implications of long-term ingestion are so little understood that there is no adequate basis for accepting or rejecting the much publicized half-truths regarding carcinogenic, mutagenic, and other deleterious effects supposedly attributable to food components. Incomplete evidence in this area prejudices public opinion and impedes the development of sound medical judgment.

Resources, facilities, and trained personnel are needed for the continuous production of better basic knowledge about the multitudinous food protection problem. New additions to the fund of scientific information are essential for the timely development of methods and criteria by which health agencies and industry can prevent unsafe foods from being offered to the public.

Recommendations

The task group reaffirms the view, expressed in the "Milk and Food" section of the Gross Committee Report on Environmental Health Problems, that the Public Health Service (PHS) has not fulfilled its responsibility in the field of food protection. By concentrating its efforts on shellfish, milk, and food service sanitation, PHS has focused on a much too narrow portion of the food field.

The task group urges the Surgeon General to give more adequate attention to the food protection aspects of environmental health, and recommends that the following problem areas be given priority:

1. Development, both intramurally and extramurally, of an enlarged research program which will produce new basic knowledge about both natural and processed foods in relation to health, and which can investigate practical problems of special importance to food protection, such as have been identified above. This program should include, but not be limited to the study of newer production, processing, and marketing methods as they may affect the public health.
2. Improvement of detection, investigation, and reporting of foodborne illnesses. In this connection, it is noted that one State has consistently accounted for 30 percent or more of all such outbreaks reported to the PHS in recent years, and that the majority of States report no more than one or two outbreaks per year. It appears that these discrepancies are not due to major differences in incidence of foodborne illness, but to the emphasis placed upon the problem by the health agencies involved. They are much in need of more efficient techniques for finding, evaluating, and recording suspected foodborne illness.
3. Collection and analysis of data concerning the occurrence, sources, and significance of hazardous microbiological or chemical substances in foods being offered to the public. Such surveys are an important means of recognizing potential problems, guiding research toward their solution, and developing preventive measures in cooperation with the industries and health agencies concerned. The favorable experience of the canning and fluid milk industries, in this regard, offers an excellent basis for the selective application of survey techniques to other potentially hazardous foods. Some of the latter appear to be much more frequently, though less obviously, involved in dissemination of harmful contaminants. By identifying specific agents with product sources, both the industry and the health agencies can be alerted to the need for epidemiological evaluation and possible remedial measures.
4. Participation with other national and international organizations in the improvement of methodology for the examination of foods and the formulation of uniform criteria for the determination of sanitary quality.

The task group believes that steps should be taken immediately to clarify further roles of the Public Health Service and the Food and Drug Administration (FDA) in the food field by means of direct discussions between key policy and operating representatives of these two agencies under the Office of the Secretary of Health, Education, and Welfare. These discussions should be supplemented by contact with the FDA Citizens Advisory Committee under the chairmanship of Dr. George Harvey. The group regrets that interpretations have been placed upon the Milk and Food Section of the Gross report which are at variance with the intent of the subcommittee responsible for its content. The task group, which includes the subcommittee members, is of the opinion that both PHS and FDA should move more strongly in this field, and that PHS can implement the subcommittee's recommendations in a manner which will be complementary to FDA activities.

The task group recommends that a strong effort be made to create greater awareness among technical and industrial organizations regarding the intent and direction of the PHS food protection program and, indeed, the entire program of environmental health. This action is needed to develop a basis for cooperation in technical studies.

PARTICIPANTS

PHS CONSULTANTS (ALSO MEMBERS, MILK AND FOOD SUBCOMMITTEE OF THE GROSS COMMITTEE)

1. Dr. G. M. Dack, director, Food Research Institute, University of Chicago, Chicago, Ill.
2. Dr. S. A. Boldblith, professor, Department of Nutrition, Food Science and Technology, Massachusetts Institute of Technology, Cambridge, Mass.
3. Dr. E. M. Mrak, chancellor, University of California, Davis, Calif.
4. Dr. K. G. Weckel, professor, Department of Dairy and Food Industries, College of Agriculture, University of Wisconsin, Madison, Wis.

FDA REPRESENTATIVES

5. Mr. Kenneth Kirk, Assistant Commissioner, FDA (present from 10 to 11:45 a.m., July 6).
6. Dr. George Harvey, chairman, FDA Citizen's Advisory Committee (present from 3:30 to 4:30 p.m., July 6).

PHS REPRESENTATIVES

7. Dr. J. M. Hundley, Office of Surgeon General (present from 10 to 11 a.m., July 5).
8. Dr. Robert J. Anderson, Chief, Bureau of State Services (present from 1 to 4:30 p.m., July 6).
9. Mr. H. G. Hanson, Assistant Chief (Environmental Health), Bureau of State Services.
10. Mr. Wesley E. Gilbertson, Chief, Division of Environmental Engineering and Food Protection.
11. Mr. M. C. Hope, Assistant Chief for Program Planning, Division of Environmental Engineering and Food Protection.
12. Mr. E. L. Ruppert, Chief, Milk and Food Branch, Division of Environmental Engineering and Food Protection.
13. Mr. E. T. Jensen, Chief, Shellfish Sanitation Branch, Division of Environmental Engineering and Food Protection.
14. Mr. H. B. Robinson, Chief, Research Grants Branch, Division of Environmental Engineering and Food Protection.
15. Dr. K. H. Lewis, Chief, Milk and Food Research, Division of Environmental Engineering and Food Protection, Robert A. Taft Sanitary Engineering Center, Cincinnati 26, Ohio.

FUNDS NEEDED TO CARRY OUT RECOMMENDATIONS OF TASK GROUP

Mr. FOGARTY. Does your budget allow you to carry out all the recommendations of the task group?

Mr. GILBERTSON. No, sir; it does not.

Mr. FOGARTY. Why not? What good are the recommendations if you do not have the funds to carry them out?

Mr. GILBERTSON. Of course, the basic reason why these activities cannot be carried out during 1964, although we will make progress——

Mr. FOGARTY. Place in the record all the recommendations that came out of this conference that you will not be able to carry out in 1964 because of lack of funds and how much in addition you would need to carry them out.

Mr. Gilbertson. Yes, sir.

(The information follows:)

Additional activities and resources needed in fiscal year 1964 to initiate recommendations of consultant groups on food protection

Total (75 positions)	$1,950,000
Research grants	710,000
Contracts	495,000
Research, training, and technical assistance	745,000

The Committee on Environmental Health Problems and the Food Protection Task Group have recommended increases in the scope and intensity of food protection activities within the Public Health Service. Their recommendations include expansion of extramural research grants and contracts as well as intramural research, surveillance, training, and technical assistance activities. On the basis of accumulated PHS experience in this field, we recognize that implementation of the recommendations can best be accomplished in reasonable increments over a 5- to 7-year period. The following immediate steps have been proposed to move the present program in the directions recommended by the Advisory Committee. As requested, estimates are given to show what funds and positions, in addition to the regular 1964 request, would be needed as the initial increment for starting work on these recommendations.

Improvement in the investigation and reporting of water-, milk-, and food-borne disease outbreaks: 15 positions, $420,000

The most serious defect of the national program for the prevention and control of water-, milk-, and food-borne diseases is the scarcity of technical intelligence about the occurrence and causes of outbreaks in the United States. Community studies indicate that people suffer more often from diarrhea than any other nonfatal illness except the common respiratory diseases. Among the millions of intestinal disturbances that must be occurring annually in the United States, and which result in economic loss through absenteeism, less than 10,000 are studied sufficieintly to identify the specific cause and source of infection or intoxication.

Of approximately 200 food-borne outbreaks reported annually to PHS, more than 30 percent come consistently from one State (California) that encourages its local health departments to work in this field. On the other hand, three-fourths of the States typically report no more than one or two outbreaks per year. In 1960, for example, 22 States, with a combined population of 45 million people, reported no water-, milk-, or food-borne diseases. Obviously this wide discrepancy in reported illness represents a serious deficiency in intelligence on the problem. Clearly marked improvement in finding, investigating, and reporting these diseases is essential for the proper guidance of the Nation's environmental sanitation programs. The Advisory Committee pointed out that with the necessary support, the Public Health Service, through the Division of Environmental Engineering and Food Protection, can exercise the leadership needed to revitalize this area. Extramural and intramural research, epidemiological, investigations, education, and technical assistance will be required to regenerate interest in the States, develop a new system and demonstrate its usefulness. A continuing effort will be needed to collect, evaluate, and disseminate the resulting information with appropriate recommendations.

Surveys of health hazards associated with market foods: 15 positions, $250,000

Limited surveys of various classes of foods, i.e., milk and dairy products, market meats, seafoods, precooked frozen foods, ready-to-eat carryout foods, etc., are conducted intermittently by health agencies to demonstrate the safety and quality of local food supplies and more regularly by industry for quality control purposes and intelligence about competitors' products. On occasion, these surveys have revealed the prevalence of potentially hazardous contaminants in consumer foods such as dressed poultry, commercial egg products, and cheese. Much of the data never reaches the open literature; instead, it is used only for a particular purpose, and is often considered confidential by the collecting organization.

In order to make fullest use of the information potentially available from other sources, it is proposed to develop, in cooperation with selected State and Federal agencies, and with the food industry, a national surveillance program to collect, evaluate, and disseminate technical intelligence on microbiological and chemical contaminants in potentially hazardous foods. The Gross commitee report urged that the Public Health Service assume the leadership in a project of this nature. When fully developed the surveillance program will provide its contributors with coded information on the occurrence in foods of specific contaminants against which the food industry and health agencies can take necessary corrective measures.

Improvement and evaluation of methodology for examination of foods: 10 positions, $250,000

The types and levels of microorganisms and chemical contaminants in foods are frequently the basis for grading (milk), specifications for purchase (military rations), sanitary quality (shellfish), compliance with violation of legal requirements (food and drug laws), and comparison with other products (competitor intelligence). Furthermore, the investigation of foodborne diseases, quality control, surveillance of foods for microbial and chemical contaminants, and development of standards are all dependent on the availability of simple, rapid, and reproducible examination methods.

Present methods are derived primarily from those used in diagnostic bacteriology and in the examination of water and milk. Procedures for the examination of one food may not be applicable to another, as has been shown in the bacteriological examination of such diverse products as eggs, meat, dairy products, animal foods, and coconut. Standard procedures for the examination of dairy products and water are based on many years of research, but methods of comparable status are not available for the examination of other foods.

State health agencies and industry look to the Public Health Service to initiate and foster research in the development of nationally acceptable methods for the microbial and chemical examination of foods. As recommended, a plan has been developed to accelerate the present inadequate research program on bacteriological and biochemical methods and to extend it into the areas of virology, toxicology, automation, epidemiology, physics, and engineering which are now being applied to the examination of foods.

Development of microbiological and chemical standards applicable to potentially hazardous foods: seven positions, $180,000

The need for standards to protect the public health is an outgrowth of the trend toward centralized processing and widespread distribution of foods that have been obtained from worldwide sources, then blended, fortified, tenderized, precooked, frozen, dried, and otherwise manipulated in ways known in detail only to the segment of industry engaged in each phase. Neither the vendor, the consumer, nor the health department can judge the safety and wholesomeness of the finished products except by their compliance with reliable microbiological and chemical standards.

The Division of Environmental Engineering and Food Protection is represented on several working committees of national and international professional and technical organizations which engage in formulation of standards for potentially hazardous foods. Whenever standards have been adopted, even on a voluntary or tentative basis, industry has markedly improved the sanitary quality of the products affected. Notable examples include fluid milk, canned goods, shellfish, and bakery products, as well as drinking water.

A long-range program of laboratory research, field investigations, education, and technical assistance will be required to develop a sound basis for the necessity, feasibility, and effectiveness of each proposed standard. The Public Health Service is in a key position to assist in national efforts directed toward uniform standardization through integration of its technical contributions with work undertaken by industry groups, research institutions, and other governmental agencies. The unmet needs in this field present an opportunity for a major advance in environmental health which neither the food industries nor the governmental agencies can achieve alone.

Reevaluation of food protection programs and practices: eight positions, $275,000

Many present food sanitation practices and programs were developed before World War II for the foods and technology of that time. Since then, revolutionary changes have occurred in the production, processing, distribution, and serving of foods. The food industry expends over $100 million per year to develop new products and processes such as dehydro-frozen, freeze-dried, or synthetic low-calorie foods, as well as vacuum-packaged, infrared or microwave-heated, and radiation-sterilized items.

These industries are highly competitive and tend to be primarily concerned with the development of products which will receive wide consumer acceptance on the basis of freshness, appearance, and texture. Their research and development programs often do not delve deeply enough into problems of food safety. For example, vacuum packaging of certain products improves shelf life and consumer acceptance, but produces an oxygen-deficient state that may be conducive to multiplication and production of toxin by some food-poisoning organisms.

Government agencies have also been hard pressed to keep abreast of new developments because the resources for food protection programs have not kept pace with population growth. To a degree, research organizations are at fault because they have sometimes failed to demonstrate how their experimental results could be used or what their effectiveness would be in practice. The Public Health Service has been urged to bridge the gap between the experimental laboratory and actual operations by means of field studies, demonstrations, and training in the area of food safety. Until a substantial effort has been made, health and food protection agencies will find it difficult to cope with new problems or to act on them without adequate technical information.

Advancement of basic knowledge in the field of environmental engineering and food protection: 20 positions, $575,000

The Division's research staff at the sanitary engineering center in Cincinnati has been remarkably productive of useful information, especially on milk and food sanitation. Two of its members have recently received departmental honor awards for their outstanding work. It represents a nucleaus of scientific talent which can be diversified and broadened to contribute needed knowledge in the field of food protection. By increasing this research effort severalfold and developing the research teams now being organized at the new shellfish laboratories in Rhode Island and Alabama, eventually a stronger research support can be built for our food protection activities. Continued development of the research grants program is, of course, an essential part of the plan.

We regard a broad program of continuing research as the primary source of technical information and competence needed to recognize new health hazards, to devise improved preventive measures, to develop new concepts, and to educate professional personnel, as well as the general public, with respect to the health implications of our changing technology. By delving deeply into physical, chemical, and biological phenomena, scientists enhance our understanding of the multiple factors that determine the health-related qualities of drinking water, milk, food, alone or in combination with other facets of the environment. A productive research program will generate the specialized knowledge and skills necessary to deal effectively with new problems. It will also provide the continuity and challenges needed to attract and hold competent professional personnel.

RAILROAD DINING CARS

Mr. Fogarty. What are you doing with regard to railroad dining cars?

They are getting worse, it seems to me. You people do not seem to do much about it.

Mr. Gilbertson. We are well aware of your feelings on that, sir, and we are working with the railroads as well as with all the transportation groups.

Mr. Fogarty. The railroads cannot get much lower than they are right now, especially the eastern ones, as far as their dining car facilities are concerned.

Mr. Gilbertson. I think basically there is a real problem here. We would not disagree with you.

We have attempted by such methods as training courses to work with the supervisory personnel of the eastern railroads as well as all the rest of them. We have done considerable work with reference to the grading of dining cars.

I think one of the problems is that we really are not——

Mr. **Fogarty.** What do you mean gradings?

Mr. **Gilbertson.** Whether it is A, B, C, or what have you, just like restaurants are graded.

Mr. **Fogarty.** What do you do after they are graded?

Mr. **Gilbertson.** They must—in order to meet grade A—meet certain sanitation requirements.

Mr. **Fogarty.** What does it mean whether it is grade A or not? Who knows whether it is grade A?

Mr. **Gilbertson.** The grading, of course, is done by inspections, generally speaking, prior to the run and this, I think, is one of our problems in this area.

Mr. **Fogarty.** Could you not put up a sign over the door of the kitchen or in the dining car that this is a grade A, B, C, or D?

Mr. **Gilbertson.** That is correct. That is where the grading signs go.

Mr. **Fogarty.** What is the lowest grade you have?

Mr. **Gilbertson.** C.

Mr. **Fogarty.** How do you know where to look?

Mr. **Gilbertson.** It is in the diner.

Mr. **Fogarty.** Is it?

Mr. **Gilbertson.** Yes, sir. Some railroads display it right at the entrance to the car. Others display it near where the steward has his space and some of them hide it in the galley.

Mr. **Fogarty.** Is there a grade A dining car in the New Haven setup?

Mr. **Gilbertson.** I could not answer that question offhand.

I can get that information for you.

(The information follows:)

Dining Car Inspection and Grading Program

For all operating railroads during 1962 about 1,000 dining and bar cars received grade A placards and 24 cars were downgraded. Of these, 8 received grade B placards and 16 received grade C. Operators are given 30 days following inspection of sanitary conditions to correct deficiencies which would require a rating of less than grade A. As inspectors are not able to provide constant surveillance, we have arranged with the management of railroads to notify our regional offices in writing on completion of needed corrections. Failure to make needed improvements in sanitary conditions results in downgrading.

During 1962, the 48 dining and bar cars of the New Haven Railroad were inspected a total of 122 times. Twenty-three of these cars were entitled to grade A placards at the time of inspection.

AIRLINE FOOD SERVICE

Mr. **Fogarty.** What about the airlines? They are starting to go downhill.

I ride them quite often and maybe it is because they are building faster planes and do not have the opportunity to keep their feeding facilities in as good shape as they used to.

Mr. **Gilbertson.** That is true.

The changes that are taking place in airline schedules due to faster planes is a real problem because there is a faster turnaround time.

The amount of servicing time that is available is less. But we are also working with the designers of the galleys on these aircraft—the industry on the west coast and the east coast—to build into the facilities the best possible equipment to facilitate good meal service, safer meal service.

Mr. FOGARTY. You are talking about four-engine planes. You are not talking about two-engine planes; are you?

Mr. GILBERTSON. This is on all new designs.

Mr. FOGARTY. I am just trying to think of any galley that is worth anything on two-engine planes. I cannot remember ever seeing one.

Mr. GILBERTSON. By galleys—we are talking about whatever they have for food service.

It varies according to the size of the plane. The larger ones have pretty substantial ovens and refrigerator equipment for storage of hot and cold food. They have to have special provisions in there for proper handling of various foods, beverages, utensils, and things like that.

Now, what we are seeing here is a gradual changeover, not only by the airlines, but also by the railroads, to more of a precooked, preprepared type of food which would be frozen and then reheated on the carrier itself. I think this is the direction they are moving.

Mr. FOGARTY. It is pretty poor food.

Mr. GILBERTSON. As to that, this direction has its advantages as well as its disadvantages.

We have actually closed down some of the food caterers within the past year and we have placed others on probational status for temporary periods, when we found things were not satisfactory.

We have attempted to pursue very careful control to the extent that resources provided——

Mr. FOGARTY. Is there anything else you would like to say?

Mr. GILBERTSON. No, sir.

Mr. FOGARTY. Thank you very much.

OCCUPATIONAL HEALTH

WITNESSES

DR. W. CLARK COOPER, CHIEF, DIVISION OF OCCUPATIONAL HEALTH

DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES

PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	1,057	1,285	1,310
	Positions other than permanent	41	45	48
	Other personnel compensation	10	8	19
	Total personnel compensation	1,109	1,339	1,377
12	Personnel benefits	134	163	164
21	Travel and transportation of persons	143	152	142
22	Transportation of things	14	17	11
23	Rent, communications, and utilities	21	24	24
24	Printing and reproduction	10	8	8
25	Other services	41	50	45
	Research contracts	148	246	240
	Services of other agencies	24	20	20
	Payment to—			
	Bureau of State Services management fund	78	108	134
	National Institutes of Health management fund	23	18	29
26	Supplies and materials	113	88	88
31	Equipment	196	122	111
32	Lands and structures	4		
41	Grants, subsidies, and contributions	1,854	1,766	2,228
	Total obligations	3,914	4,121	4,621

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	180	194	197
Full-time equivalent of other positions	9	9	9
Average number of all employees	166	181	183
Number of employees at end of year	181	198	201
Average GS grade	7.4	7.4	7.5
Average GS salary	$6,884	$7,272	$7,326

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Research grants	1,854	1,766	2,228
2. Research, training, and technical services	1,807	2,355	2,393
Total program costs, funded [1]	3,661	4,121	4,621
Change in selected resources [2]	253		
Total obligations	3,914	4,121	4,621
Financing:			
Unobligated balance lapsing	55		
New obligational authority	3,970	4,121	4,621
New obligational authority:			
Appropriation	3,981	4,122	4,621
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−11	−1	
Appropriation (adjusted)	3,970	4,121	4,621

[1] Includes capital outlay as follows: 1962, $100,000; 1963, $122,000; 1964, $111,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $31,000; (1962 adjustments, $6,000); 1962, $290,000; 1963, $290,000; 1964, $290,000.

GENERAL STATEMENT

Dr. COOPER. Mr. Chairman and members of the committee, I have a statement which, with your permission, I would like to submit for the record and summarize orally.

(The statement follows:)

Mr. Chairman and members of the committee, the year 1964 marks a half century of activity by the Public Health Service in occupational health. In those 50 years the health problems of the Nation at work have increased in number and complexity, proceeding in pace with industrial change.

During the early years, gross health impairments from massive exposures to a few harmful substances, such as lead, mercury, and quartz, dominated the field. Today we are confronted with myriad and subtle actions and interactions associated with a much more varied and changing work environment.

One dimension of technologic change during this period may be found in the growth of the chemical industry. Of the thousands of chemicals in use today, 90 percent did not exist 25 years ago. Painstaking tests on each are necessary if harmful effects on workers are to be predicted and prevented.

In recent years, scientific advances have opened up new avenues of inquiry, revealing occupational health problems previously unrecognized. Thus, concern today also extends to disturbances which are less dramatic than the rapidly fatal or disabling diseases once so common, but which may subtly take a long-term toll of the health and productivity of a large number of employees. For example, chronic pulmonary diseases, skeletomuscular disorders, unusual responses to infection, and unexpected hypersensitivities are believed to be frequently associated with remediable conditions in the work environment.

Field studies and laboratory research on the cause and control of occupational disease have been a continuing effort of the Division of Occupational Health. The Division has contributed an epidemiologic technique correlating clinical observations with environmental conditions, which has been recognized the world over as an indispensable tool in assessing the health problems of the worker. To keep abreast of modern technology, the Division has had to strengthen its competence in the biological, physical, and social sciences. Through the addition to the staff of specialized personnel in the past couple of years, the Division's studies have achieved a new scope and depth. The funds requested will provide necessary support for research, especially in certain field studies and in toxicology, and will permit increases for training and for extramural research.

RESEARCH GRANTS

A total of 61 grants in the amount of $1,766,000 is being supported in 1963. The average award per grant has risen from $27,700 in 1962 to $29,000 in 1963. This trend upward is expected to continue for some time due to the type of research necessary to deal with important problems in this area and to the increased costs of personnel and equipment.

Universities and other nonprofit institutions look to these grants to support vital creative research in occupational health. In 1964, the additional $462,000 requested will permit the funding of 15 new research grants, as well as the continuation of active grants awarded in prior years.

Extramural research studies underway cover a wide range of projects. One of these studies seeks to ascertain the validity of behavioral changes as an early indicator of toxicity. Another grant concerns occupational health studies of optical masers or lasers, a revolutionary development, whereby light is tremendously amplified in a manner making possible its transmission for great distances in an extremely narrow intense band.

SURVEILLANCE OF TRENDS

We are closely observing trends in modern industry and agriculture to permit the early development of precautionary and preventive measures. As part of this effort, we have underway a long-term program to study records of the Federal Bureau of Old-Age and Survivors Insurance, as well as data from statewide temporary disability plans and the Bureau of Labor Statistics, to determine the relation between occupation and health. We also plan to develop a voluntary reporting system in a carefully selected sample of business establishments.

During the past year, considerable emphasis was given to the long-term effect of occupational exposures on health. A comprehensive study of lung cancer in relation to occupation revealed a number of occupations with significantly high lung cancer mortality rates.

A continuing study of the health of the working population in the United States, as reflected in sickness absentee rates, revealed that illness resulting in work loss was slightly higher in the calendar year 1962 than in 1961. Since 1950, there has been a slight increase in the percentage of absences among the working population due to illness. Despite this upward trend, however, a study of sick absences in 12 Western countries carried on during the year showed that the absence rate for sickness for the United States is one of the lowest.

INDUSTRIAL TOXICOLOGY

In toxicology, a new area of exploration is opening up with recent work on predictive tests of hypersusceptibility to hemolytic chemicals and drugs. Such tests are based on the detection of inherited deficiencies of specific enzymes. Predictive tests may have great significance for industry, where approximately 1 million workers are involved in the manufacture of industrial chemicals and several times that number are exposed to chemicals through handling and use.

Emphasis is also being placed on a series of studies to determine early effects of exposure to various chemicals through detection of changes in tissues and blood enzymes, and other substances. These "biochemical profile" studies are part of our continuing research to develop techniques for evaluation of toxicity prior to permanent damage.

During the year, a variety of studies were conducted to evaluate the toxicity of specific industrial substances and to determine how toxic agents injure the body. Among these were long-term studies designed to develop information leading to the recommendation of a threshold limit for oil mist exposures, common in machine tool operations. Chronic toxicity studies were also undertaken for evidence of pathologic change at levels below and above the current threshold limit for nitrogen dioxide. Another study probed the potential health hazards of a large number of intermetallic compounds, such as bismuth telluride and indium antimonide, which are finding increasing use as thermoelectric elements and semiconductors.

A cooperative study was also begun to evaluate the toxic potential of a new domestic reserve deposit of beryllium ore before mining operations begin. This deposit, located in southwestern Utah, is considered the largest "free world" beryllium.

ERGONOMICS AND STRESS

In an effort to find out more about man's capacity to work in the industrial complex of our times, ergonomic studies are now underway to determine his adaptability and compensatory mechanisms. Among these are studies designed to find the proper balance between work stresses and work capacity. This type of information is greatly needed to increase knowledge of working conditions conducive to optimum health and efficiency.

One of the activities in which we have been engaged is to determine hearing loss produced by continuous versus impulse industrial noises, and the extent to which it can be offset by protective devices. Work is also underway on the psychologic and neurophysiologic effects of noise, such as how it affects learning and performance of a complicated task.

We plan to start studies on aging and occupation. These studies will be directed to determining optimal rest-work regimens and compensatory allowances for middle-aged and older men doing hard physical work. Aging will also be studied as a factor in altering skills and ability to do physical tasks.

STUDIES OF PULMONARY DISEASES

One of the earliest health problems to be recognized as related to man's industry was pulmonary disease in mining. Although silicosis and anthracosilicosis have been studied in hard-coal miners, until the past decade little attention was paid in this country to chest diseases in bituminous-coal miners. As a result of the increase of $100,000 appropriated by Congress for 1963, the Division began a study of bituminous-coal miners in January 1963. Extending into 1964, the study will seek to determine the extent to which chronic pulmonary disease is a problem among soft-coal workers, its underlying causes, its relationship to the working and living environment of the miners, the course of the disease, and its social impact.

A field team, using mobile equipment, is studying carefully selected population samples to determine the amount and character of pulmonary diseases, such as pneumoconiosis, emphysema, and chronic bronchitis, in active and retired coal miners in southern West Virginia and adjacent areas. Field studies of cardiopulmonary function are being supported by laboratory studies, as well as by special studies performed under contract. A battery of ergonomic tests is being used to characterize the work capacity of miners with various degrees of lung involvement.

STUDY OF URANIUM MINERS

As evidence continues to point to a lung cancer hazard in the mining of uranium, there is a continuing need for research and control efforts. Surveillance of miners and mines will continue. The Division will also continue to assist the States of the Colorado Plateau in reducing radiation levels and in supporting cooperative activities directed at the early diagnosis of lung cancer. Encouraging progress has been made by many of the larger mining companies in controlling radioactive dust and gas, but a serious problem still exists in many older and smaller mines.

GENERAL EPIDEMIOLOGIC STUDIES

Our general epidemiologic studies cover a wide variety of problems. They are designed to detect and evaluate potential health hazards associated with the work environment and to develop methods for their control. During the past year, for example, our laboratory research identified the agent responsible for celery dermatitis, a troublesome skin disease among farmworkers, and recommended means for its control. Animal feed mills were studied to determine if the increasing use of feed additives has created special hazards to workers. Some of the major studies that we are now carrying on include a recently initiated 5-year study of the effects of heat and cold in industrial situations. To facilitate this study, a chamber was designed and built for controlled research on the physiologic and psychologic impact of temperature, humidity, radiant heat, and air movement in combinations typically encountered in industrial situations. Current and proposed studies of problems in specific industries include the effects of nitroglycerin and nitroglycol exposures in explosives plants, and potential health hazards in the asbestos products industry.

ENVIRONMENTAL EVALUATION AND PREVENTIVE MEASURES

A continuous program of research is carried on to devise simpler, faster, and more accurate means of identifying and measuring substances encountered in the work environment. Recent projects have included the development of a rapid ion exchange method for the detection of minute quantities of mercury in urine. This method is 10 times more sensitive than the conventional dithizone method. Work also continues on reference standards for chemical and physical analysis, and on studies of industrial ventilation design criteria.

A complete review of methods of measuring dust exposures is underway. Current trends in sampling and measurement techniques used in various countries were studied during the year. Efforts have also been increased to develop techniques which will permit comparison of epidemiologic findings on an international basis.

TRAINING AND EDUCATION

In the face of the widening gap between available personnel and needed manpower, the Division carries out activities to aid in developing professional resources. In addition, it helps personnel in the occupational health field keep abreast of new processes and materials used in industry and how they affect the worker's health.

Emphasis in our own training programs is on short-term courses not provided elsewhere. Courses range from those covering basic industrial hygiene principles to those that treat highly specialized areas, such as advanced courses in the evaluation and control of heat stress and noise.

Most of the courses are presented at the Division's Occupational Health Research and Training Facility at Cincinnati. Training teams are also sent to various parts of the country to present courses specially tailored to the needs of the area. Eleven courses are scheduled to be held at the facility between January and June 1963 for various groups, including directors of State and local governmental occupational health agencies, nurses, physicians, engineers, chemists, and other professional personnel. Courses offered elsewhere include two recently held in Puerto Rico, one for sanitarians and one for industrial hygienists.

The increase requested for 1964 will permit the presentation of a greater number of basic, advanced, and special courses. It will permit more emphasis than has been possible in the past on the occupational health training needs of physicians and nurses.

The technical information exchange service of the Division has illustrated its usefulness in various ways. Maintained for public use, this service provides information on occupational health hazards, toxic substances used in industrial processes, detection methods, and general control procedures. Some 400 inquiries on 195 different subjects from various professional personnel and the general public were answered in the past year. Through this service, the Division participates in the International Safety and Health Information Center established by the International Labor Organization.

TECHNICAL ASSISTANCE

In discharging their direct legal responsibilities for worker health protection, many State and local agencies call upon the Division for consultation and assistance. Recently, for example, the Division conducted a thorough study of occupational health problems and needs at the request of the Governor of one of our States as the basis for an action program. Assistance provided during the year has included evaluation of dermatologic problems, surveys of noise and other health and medical problems at airports, studies of heat stress in industry, administration of occupational health programs, and engineering and medical control of various health hazards in the working environment.

HISTORY OF OCCUPATIONAL HEALTH ACTIVITIES

Dr. Cooper. The year 1964 marks a half century of activity by the Public Health Service in occupational health. In those 50 years the health problems of the Nation at work have increased in number and complexity, proceeding in pace with industrial change.

During the early years, gross health impairments from massive exposures to a few harmful substances dominated the field. Today we are confronted with myriad and subtle actions and interactions associated with a much more varied and changing work environment. Concern today also extends to disturbances which are less dramatic but which may take a long-term toll of the health and productivity of a large number of employees.

New statistical approaches were developed and used during the year to establish associations between work and disease. Continued use and refinement of such techniques can pinpoint areas of needed research in a complex and changing technology, and minimize lost time and disability.

In toxicology, efforts have continued toward the early detection of the toxic effects of new industrial chemicals, hundreds of which come into use each year. Safe limits for working exposures must be developed for each. New predictive tests to locate individuals usually susceptible to toxic effects are promising. Studies have also been carried out on several substances of broad industrial interest.

CURRENT STUDIES

Laboratory studies on the effects of noise on learning and performance supplement a continuing program of research on industrial noise and on certain aspects of aircraft and community noise.

On January 15, 1963, field operations began in a study of pulmonary disease in soft-coal miners in West Virginia. Extending into 1964, this study will first be aimed at determining the extent to which pneumoconiosis, emphysema, and chronic bronchitis are a problem. We hope that it will lead ultimately to better preventive measures and help minimize the socioeconomic impact of chronic pulmonary disease in mining areas.

We are continuing our research and control efforts in uranium mines as evidence of a serious lung cancer hazard persists. Surveillance of miners and mines will be continued, and the Division will continue to provide assistance to the States concerned.

The need for personnel to carry out programs for protecting worker health necessitates increasing emphasis on our training activities. Most of the increase requested for 1964 for direct operations will permit augmentation of our staff and will permit giving several additional short-term courses.

Sixty-one research grants, totaling $1,766,000, are being supported in 1963. The additional $462,000 requested in 1964 will permit the support of 15 new projects and the continuation of all active grants.

Mr. Chairman, I shall be happy to answer any questions which you or other members of the committee may have.

Mr. Fogarty. Thank you, Doctor.

ABSORPTION OF PAY ACT COSTS

The appropriation for 1963 is $4,122,000 and the request for 1964 is $4,621,000, an increase of $499,000 and three positions. How much were your Pay Act costs in 1963?

Mr. Bersano. $37,800.

Mr. Fogarty. How much are you absorbing?

Mr. Bersano. The full amount.

Mr. Fogarty. Was any of that taken from the $100,000 allowed for the West Virginia study of pulmonary diseases in soft coal miners?

Dr. Cooper. It was not.

Mr. Fogarty. How much is being spent this year?

An even $100,000? I am talking about 1963.

Dr. Cooper. For the coal miners' study, yes. Very close to it, plus or minus a little bit. It is very close to a hundred thousand dollars.

Mr. Fogarty. Where are you absorbing these pay costs?

Dr. Cooper. These are being absorbed in our research and operations in the Cincinnati laboratory and we had six positions eliminated.

Mr. Fogarty. Where were they, all in Cincinnati?

Dr. Cooper. Cincinnati, and we had two in Washington.

MINING STUDIES

Mr. Fogarty. In total how much are you spending in connection with mining?

Dr. Cooper. Total in connection with mining? I can make an estimate. I would have to get the figures for the record. We have two or three different studies.

Mr. Fogarty. How much is your estimate?

Dr. Cooper. The estimate of the coal mining study and other mining studies is about $300,000.

Mr. Fogarty. Do you know how much the Bureau of Mines is spending on closely related activities?

Dr. Cooper. I could not tell you.

Mr. Fogarty. You can get that for the record?

Dr. Cooper. Yes.

(The information follows:)

The 1963 appropriation for the Bureau of Mines provided for $490,000 in activities related to mine environment of significance to health.

SILICOSIS CONTROL

Mr. Fogarty. What have been the results of your work on lung diseases in miners?

Dr. Cooper. We have completed the study of the metal miners—15,000 metal miners were examined.

Mr. Fogarty. Where are they?

Dr. Cooper. These are located in 14 States, all of the Western States except Oregon. Some were in Michigan, some in Missouri and Pennsylvania.

Mr. Fogarty. Most of the Western States?

Dr. Cooper. All the Western States except Oregon. We examined 15,000 miners over a period of 3 years and we found that of the working miners about 3½ percent showed X-ray evidence of silicosis. This study was done in collaboration with the Bureau of Mines which did the environmental studies.

Mr. Fogarty. Is that serious? Three and a half percent?

Dr. Cooper. I think it depends—it is serious to the man who has it.

Mr. Fogarty. We have been hearing about this problem of silicosis for a number of years now. I thought perhaps we had that under control now.

Dr. COOPER. The silicosis that we found was for the most part in the miners who had worked 25 years or more and in part represented their exposures before the days of active control or effective control measures. I am not saying it is eliminated.

Mr. FOGARTY. Does it seem to be associated with smoking?

Dr. COOPER. Silicosis does not seem to be associated with smoking. Twenty-five or thirty years ago a miner stood a good chance of developing silicosis in 5 or 10 years of mining. I would say that our present mining working conditions are such that it would take 30 or 40 years for him to develop silicosis on the average and many of the cases would not be as serious. The problem has not been eliminated but has been greatly reduced.

INCREASE FOR RESEARCH GRANTS

Mr. FOGARTY. Most of your increase is for research grants. There is a total increase of $462,000, but only five more grants.

Dr. COOPER. I thought our estimate was 15 more.

Mr. BERSANO. It would be 11 more new projects that we can support in 1964 over the new projects we had in 1963.

Dr. COOPER. Yes, because there will be some that will not be continued.

Mr. FOGARTY. What is the figure on page 72, total research grants—that goes from 61 to 66?

Dr. COOPER. This is the total additional number because some of the 1961 grants will not be continued over into the next year. So we will be able to start 15 new projects but a certain number of older projects will be terminated.

Mr. FOGARTY. My question is still the same. The total increase from 1963 to 1964 is only five. Is that right? 61 to 66?

Dr. COOPER. Yes, sir.

SIZE OF NEW GRANTS

Mr. FOGARTY. The new grants that you are going to finance must be much larger than the ones you are now financing; is that right?

Dr. COOPER. My prediction would be that our grant should only be around $30,000, on the average.

Mr. FOGARTY. The table shows that you have a total of five more research grants and an increase of $462,000. Anyone looking at that summary would gain the impression that you are supporting five additional grants for $462,000.

Dr. COOPER. I would have to agree. That is the interpretation.

Dr. ANDERSON. The dollar amounts of grants are going up gradually.

Mr. FOGARTY. Why?

Dr. ANDERSON. Costs for one thing, and scope of the projects that are being submitted.

Mr. FOGARTY. Costs would not amount to that much. It must be the type of project.

Dr. ANDERSON. That is what I mean.

Mr. FOGARTY. Give me an example.

Dr. COOPER. Of a project of larger scope?

Mr. FOGARTY. Yes.

Dr. COOPER. We have one particular project in the study of the effects of vibration on man—this is not a new one that has come in—which is in the neighborhood of $100,000. We have two or three recent projects—pulmonary function—which are $65,000 or $75,000 projects.

Mr. FOGARTY. What are the fields of research that you are now emphasizing?

NOISE STUDIES

Dr. COOPER. Pulmonary diseases as they relate to occupation, occupational toxicology, studies of noise, extra-auditory as well as its effects on hearing.

Mr. FOGARTY. What results have you had in this particular study? I read something about this study last summer.

Dr. COOPER. The studies of extra-auditory effects have been in progress about 6 or 8 months in pilot form and these involve the exposure of individuals to recorded noise, the effects on concentration and on memory, the ability to do certain new tasks and repetitive tasks. I don't think we have any results to report yet.

Mr. FOGARTY. Are you doing this with human beings?

Dr. COOPER. Yes, sir.

Mr. FOGARTY. Has it been tried out in animals?

Dr. COOPER. These are areas of noise that have been tried out in animals. But we ourselves have not tried them out in animals. These are levels of noise that are commonly associated with street noises, aircraft noises—noises that many human beings are exposed to.

Mr. FOGARTY. Do you plan any changes in 1964 in the field of research?

Dr. COOPER. We will have some changes of emphasis due to the fact that certain of our epidemiologic studies will have been completed and others will take their place.

BACKLOG OF APPROVED PROJECTS

Mr. FOGARTY. I notice you are financing only four new projects in 1963. How many good applications do you have on hand that you think you should be financing?

Dr. COOPER. We have considerable reason to believe that after the next Council meetings there will probably be a backlog of between $200,000 and $300,000 worth of good, approved projects. As to the number of grants, I am not prepared to say.

Mr. FOGARTY. When is the next Council meeting?

Dr. COOPER. Next Monday.

Mr. FOGARTY. You will have a firm figure within the next couple of weeks?

Dr. COOPER. Yes, sir.

Mr. FOGARTY. Will you supply it for the record?

(The information follows:)

We estimate there will be a backlog of $213,000 and seven research grants.

Mr. FOGARTY. How many new ones can you finance with this budget for 1964?

Dr. COOPER. Fifteen new ones will include the carryovers of unpaid grants from 1963.

INTERNATIONAL EXCHANGE OF INFORMATION

Mr. **Fogarty.** On page 77 you say there will be active interchange of instruments and experiences with investigators in Western Europe. This is in connection with dust sampling techniques. Will you tell us about this proposal?

Dr. **Cooper.** We had the good fortune last year to have a consultant from the World Health Organization who is the chief of research in dust sampling methods for the National Coal Board in the United Kingdom. They have a very elaborate and extensive program of study and control of dust diseases in their coal mines. They have had a very excellent program of research. Mr. Walton, their Director of Research, spent 3 months in this country. He brought the instruments that have been used there; also instruments that have been used in Western Europe. We are hoping that by using similar techniques in our country and in Western Europe, we will be able to benefit from the great amount of information that is being obtained in British mines, West German mines, and French mines, which we can then correlate with our own experience in mines and other dusty working areas.

INTERNATIONAL INFORMATION CENTER

Mr. **Fogarty.** How do you contribute to and benefit from the International Occupational Safety and Health Information Center established by the ILO? Is this in Geneva?

Dr. **Cooper.** The Center is in Geneva. We have an agreement with them through which we supply abstracts of literature on occupational health from the United States and this is entered into their file of information, which is distributed to some 27 countries, to some 1,500 different individuals throughout the world. We in turn get their supply—we are the representative of the United States for this operation.

Mr. **Fogarty.** How do you benefit from it?

Dr. **Cooper.** The United States has no monopoly on good research in this occupational health field.

Mr. **Fogarty.** You mean to tell me that there are countries that have better research programs than we have in occupational health?

Dr. **Cooper.** They have excellent research programs.

Mr. **Fogarty.** Better than this country?

Dr. **Cooper.** I would not say better. In some areas they have individuals who are making advances from which we will benefit.

Mr. **Fogarty.** All right. Is there anything else you want to say?

Dr. **Cooper.** No, sir.

Mr. **Fogarty.** Thank you very much.

RADIOLOGICAL HEALTH

WITNESSES

DR. DONALD R. CHADWICK, CHIEF, DIVISION OF RADIOLOGIAL HEALTH
DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	3,128	4,057	4,383
Positions other than permanent	27	100	105
Other personnel compensation	22	22	46
Total personnel compensation	3,176	4,179	4,534
12 Personnel benefits	518	716	791
21 Travel and transportation of persons	379	496	541
22 Transportation of things	113	140	162
23 Rent, communications, and utilities	210	247	402
24 Printing and reproduction	80	140	149
25 Other services	361	650	721
Research contracts	1,211	1,668	1,968
Services of other agencies	35	100	100
Payment to—			
Bureau of State Services management fund	533	629	758
National Institutes of Health management fund	15	20	29
26 Supplies and materials	508	559	630
31 Equipment	1,052	1,199	1,251
32 Lands and structures	14	----------	----------
41 Grants, subsidies, and contributions	2,171	5,045	6,740
Total obligations	10,377	15,788	18,776

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	632	762	780
Full-time equivalent of other positions	5	17	18
Average number of all employees	551	719	762
Number of employees at end of year	693	834	852
Average GS grade	6.3	6.4	6.3
Average GS salary	$5,643	$6,046	$6,008
Average salary of ungraded positions	$4,535	$4,353	$4,353

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	1, 196	1, 545	2, 240
(*b*) Training	975	2, 000	2, 500
(*c*) State program development		1, 500	2, 000
2. Research, training, and technical services	7, 585	10, 743	12, 036
Total program costs, funded [1]	9, 757	15, 788	18, 776
Change in selected resources [2]	620		
Total obligations	10, 377	15, 788	18, 776
Financing:			
Comparative transfer to other accounts	24	24	
Unobligated balance lapsing	81		
New obligational authority	10, 482	15, 812	18, 776
New obligational authority:			
Appropriation	10, 647	15, 875	18, 776
Transferred to (−)—			
"Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728)	−145	−63	
"Salaries and expenses, Office of the Surgeon General" (42 U.S.C. 226)	−20		
Appropriation (adjusted)	10, 482	15, 812	18, 776

[1] Includes capital outlay as follows: 1962, $1,045,000; 1963, $1,199,000; 1964, $1,251,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $555,000 (1962 adjustments, $423,000); 1962, $1,598,000; 1963, $1,598,000; 1964, $1,598,000.

Mr. FOGARTY. We will now take up radiological health.

Dr. Chadwick, do you have a statement?

Dr. CHADWICK. I have a brief summary.

GENERAL STATEMENT

Mr. Chairman and members of the committee; I have a somewhat longer written statement which, with your permission, I should like to submit for the record.

(The statement follows:)

Mr. Chairman and members of the committee, major civilian and military programs of the United States continue to involve the generation of ionizing radiation as a major byproduct, both through direct exposure of workers and contamination of the environment. Thus, large numbers of people are going to be exposed to more radiation from a greater variety of sources. Prudent planning on the part of health agencies requires that a reasonable effort should be made to keep our knowledge, techniques, and capability growing with developing sources of exposure.

In the planning and conduct of our program to meet the responsibilities of the Public Health Service in connection with radiation hazards to the U.S. population, the Service receives major assistance and guidance from the outstanding nongovernmental experts constituting the National Advisory Committee on Radiation (NACOR). In addition to regular consultation provided by meetings held at least four times a year, the Committee has provided the Service with two major reports containing specific program and policy recommendations. The Committee on Environmental Health Problems, commonly referred to as the Gross Committee, in the section of its report dealing with radiological health, also made various recommendations which are in accord with those of NACOR. The first NACOR report, entitled "The Control of Radiation Hazards in the United States," was published in March 1959. In addition to broad policy recommendations, this report urged stepped-up effort in research aimed at the provision of scientific data for the development of radiation protection standards and expanded training programs to meet the needs for professional and technical personnel.

The second report, published in May 1962, was the culmination of a 6-month intensive study by NACOR of the problems created by radioactive contamination of the environment. The recommendations contained in this report, as well as the first report, are referred to in the following summary of the major elements of the radiological health program of the Service to be conducted in 1964.

INCREASE FOR 1964

This year our budget totals $15,787,961. For 1964, we are requesting $18,776,000, an increase of $2,988,039. The major elements of this increase are (*a*) in grants: Research grants, $695,000, training grants, $500,000, State program development grants, $500,000; (*b*) in direct operations: Research, $619,000, technical assistance, $235,000, laboratory and surveillance activities, $217,039, and training, $222,000.

RESEARCH

NACOR has repeatedly emphasized the need for more intensive research programs in the field of radiological health, particularly to provide "scientific data for the development of improved standards of radiation protection." In its second report NACOR described these needs in the following language:

"Radiobiological studies of the relationships between environmental levels of radiocontamination and subsequent human exposure to ionizing radiation and research on the natural history of radiocontaminants in the human and his environment are additional areas requiring intensive research.

"In the field of countermeasures, the research demands are particularly great since countermeasures to control environmental contamination are in a relatively early stage of development. The research should be directed to methods which (*a*) improve the safety of radiation sources; (*b*) control the vectors by which radiocontaminants are distributed to the population; and (*c*) minimize or prevent the deleterious effects of radiocontaminants admitted to the body."

In order to meet these needs, the Division is carrying out the following research activities:

> Epidemiological studies in human population groups of the relationship between radiation exposure and deleterious effects;
>
> Supportive laboratory studies to better define radiation dose to critical human tissues and organs and to provide indexes of radiation damage essential to evaluation of radiation effects in man; and
>
> The development of techniques and methodology for the control and reduction of radiation exposure of the population, both from sources such as medical and dental X-rays, as well as from environmental contamination with radioactive materials.

These programs are carried out by scientists at nongovernmental laboratories and institutions throughout the country through contracts and grants, as well as by direct operations in our own laboratories.

There have been significant accomplishments in these programs during 1963. For example, the thyrotoxicosis therapy followup study begun in 1961 now includes 25 participating medical centers and involves a roster of nearly 40,000 patients. This study is concerned with the late effects of radioiodine treatment of adult patients for such disorders as thyroid cancer, leukemia, and certain metabolic abnormalities. Another study currently underway of strontium 90 uptake by infants has given early indication that more of this radionuclide is absorbed from the diet by infants than had previously been estimated.

Studies have demonstrated the effectiveness of shifting dairy herds from pasture to stored feed in reducing the radioactive iodine 131 content of milk supplies. Since milk is the predominant source of radioactive iodine in environmental contamination, such a measure can be very effective in reducing population exposure to iodine. A successful project jointly supported by the Public Health Service, the U.S. Department of Agriculture, and the Atomic Energy Commission has demonstrated on a pilot-plant basis the effectiveness of the ion-exchange process for the removal of strontium 90 from milk. Work is progressing toward a contract for the development of a commercial plant application of this process.

During 1964, we plan to continue the programs mentioned above, and to give further emphasis to the development of data which may provide a firmer basis for the health factors in the formulation of radiation protection standards. Epidemiological studies of human population groups and supportive laboratory studies will be emphasized. For example, we plan to undertake a followup study of infants and children whose thyroid function has been determined by the use of radioiodine in order to look for any possible deleterious effects in these children. In addition, we expect to start in a midwest city a study of a group of 1,000 persons who received whole-body X-radiation in childhood. This group also will be followed up for possible deleterious effects. Studies will be made also in young and adult beagle dogs to relate effects on the thyroid from iodine 131 to those from external radiation. Such studies are important as current information on radiation effects on the thyroid is based on external X-ray exposure.

TECHNICAL ASSISTANCE

In its first report, NACOR noted that "The enforcement of regulations affecting the health and well-being of our society has traditionally been the responsibility of State and local government agencies," and said "* * * in order that State and local governments may discharge their responsibilities with the greatest effectiveness, the committee recommends that the agency (the Public Health Service) be granted authority to provide technical and financial assistance to such governments, as in other public health programs."

A majority of the States are in the relatively early stages of development of comprehensive radiological health programs and need substantial technical and financial assistance if their programs are to be built to satisfactory operational levels in a reasonable period of time. To provide this needed assistance, the Division of Radiological Health carries out the following:

Financial assistance through State program development grants, on a 1 to 1 matching basis;

Development of model codes and methodology of survey and control operations for use in State programs;

Technical advice and consultation through consultants stationed in our regional offices; and

Direct assistance through Public Health Service officers assigned to State health departments.

The most significant development during 1963 was the inauguration of the State program development grant program with $1.5 million appropriated by Congress to be made available on a 1:1 matching basis to States. To date, 50 States and territories are participating in this grant program. The States of Kentucky, Mississippi, New York, and California have concluded agreements with the Atomic Energy Commission whereby regulatory authority over certain licensed radioactive materials has been transferred to the State under the authority of Public Law 86–373, and agreement has been reached for Texas to assume this authority March 1. Public Health Service officers have been assigned to all of these States, and in the case of Kentucky, the Public Health Service officer was the director of the program. During 1963, 30,000 dental X-ray units have been surveyed, using the mail order dental surpak method developed by the Public Health Service. It is estimated that approximately 50 percent of the dental X-ray units in this country have now been surveyed.

In 1964, we plan to continue and strengthen these programs. The additional $500,000 in State program development grants, bringing the total to $2 million, will permit further improvement and expansion of State radiological health programs. In addition to expanding the dental surpak program to a level of 50,000 surpaks, we plan to direct attention to the development of a similar technique for use in certain medical X-ray equipment. Although the problem in connection with medical X-ray equipment is considerably more difficult than in the case of dental, the need was reemphasized by a report in October 1962 from the National Health Survey showing that there are an estimated 85 million visits annually to medical facilities for medical X-rays in this country. Since each visit frequently involves more than one X-ray exposure, the number of exposures may well exceed the previous estimate of 160 million.

LABORATORY AND SURVEILLANCE ACTIVITIES

In its report of March 1959, the National Advisory Committee on Radiation recommended that the Public Health Service should consider exposures from all sources of ionizing radiation. With the resumption of nuclear testing, the Committee made a more detailed evaluation of surveillance data in May of 1962. They pointed out that air, precipitation, and fresh milk are three of the most important aspects of the environment to be examined. They endorsed the progress of the Service, but particularly encouraged the development of State and local laboratories, and a Public Health Service system which would develop national standards for monitoring procedures, and a continuing evaluation of the State and local laboratories.

With the continuing concern regarding exposure of people to radioactive iodine and fallout, and the prospect that the spring and summer of 1963 would show definite increases in the content of radioactive strontium in the environment, a panel established by the President's Office of Science and Technology and the Bureau of the Budget reviewed the monitoring activities in all Federal agencies. The panel found that the program for monitoring air for the intended purposes of alerting to the need for more precise surveillance measures was reasonably well developed. It recommended the establishment of a central location within the PHS to coordinate the sampling networks of all Federal agencies. It suggested that the diet sampling program be further utilized to help in evaluating a given fallout deposition in terms of the amount ingested by man.

Presently, in line with these recommendations, and in order to meet the need to provide complete and reliable data on all sources of radiation exposure, the Division of Radiological Health carries out the following programs:

A developmental program to determine the most effective and economical methods to collect, collate, and analyze data on radiation exposure including instrumentation and methodology of radiochemical analysis:

Nationwide surveillance and monitoring networks in air, water, milk, and foods in cooperation with State and local health agencies;

Specialized monitoring programs in cooperation with Federal agencies in connection with certain sources such as maritime reactors and aerospace nuclear devices and systems; and

A radiation surveillance center to provide a central point for collecting and reporting data on population radiation exposure.

During the last year, the alerting systems and more comprehensive measurement and surveillance programs developed by the Service have permitted an estimate of the extent of population exposure from nuclear weapons tests, and a delineation of the areas which must be studied intensively when countermeasures are under consideration.

The laboratory system which performs this surveillance has established a quality control organization to promote uniformity of analytical results. These data have been correlated and reported to other Federal agencies, the States, and public agencies on daily, weekly, and monthly bases as the situation has required.

In 1964, we propose to carry out laboratory and surveillance activities consistent with both the recommendations of the NACOR, and the advice received from the President's Office of Science and Technology. We plan to strengthen the operational and analytical capability of the Radiation Surveillance Center to make the overall effort of the Federal program more effective. It is proposed to strengthen the quality control system within the laboratories in order to promote uniformity in analytical results in State laboratories participating in surveillance work related to specific radionuclides, as well as radiation alerting systems.

TRAINING

NACOR has estimated that in order to provide for adequate staffing of radiological health programs in this country, some 1,200 radiation health specialists and 4,000 radiological technicians will be required through the year 1970. In its most recent report, the Committee recommended, "That training programs for radiation health specialists and radiological technicians be fully supported and strengthened in the years ahead, to assure an adequate supply of trained manpower to meet increasing demands."

The following program is being carried out in order to meet the needs for trained personnel:

Financial assistance to universities through training grants to support curriculum development and for grants to qualified graduate students;

Technical short-course training, particularly directed to personnel in general program activities of health agencies where some knowledge of radiological health is necessary;

Training support services, including assistance to State and local health agencies in the conduct of radiological health training, and the provision of course manuals, texts, handbooks, exhibits, and other training and educational materials; and

Advanced academic training for qualified Public Health Service officers to enhance their usefulness in our programs.

During 1963, the provision by Congress of $2 million in training grant funds has permitted us to move effectively toward the goal set by NACOR for radiological health specialists. Examples of the 23 universities presently participating in this program are the University of California at Berkeley, Harvard University, the University of Minnesota at Minneapolis, the University of North Carolina at Chapel Hill, and the University of Texas at Austin. Recent nuclear testing has required the acceleration of our short-course training activities in order to provide the necessary support to State radiological health programs in the specialized techniques required for participation in monitoring and surveillance programs. These courses are presented in PHS facilities in Cincinnati, Ohio; Las Vegas, Nev.; Montgomery, Ala.; Winchester, Mass; and Rockville, Md.

In 1964, we are requesting an increase of $500,000 in the training grant program to permit the inauguration of grant supported training programs for radiological health technicians. NACOR emphasized that there should be three technicians for each radiological health specialist in order to make most effective use of the specialists. During 1964, we also plan to expand the short-course training effort in order to move to meet the ever-expanding requirements for personnel with knowledge of radiological health. Emphasis will be placed on the conduct of short-course training in the field in order to reach more State and local health agency personnel.

FALLOUT FROM PAST TESTS

Dr. Chadwick. Currently, negotiations are underway between this Nation and the Soviet Union in an effort to achieve an agreement on the cessation of nuclear weapons tests in the atmosphere. It is everyone's earnest hope that these negotiations will come to a successful conclusion.

While a cessation of atmospheric weapons tests would not, within the immediate future, permit us to substantially reduce our programs for the measurement and surveillance of environmental contamination by radioactive materials, it might ultimately permit us to devote a greater portion of our attention to the other very significant problems in the field of radiation protection.

Only a relatively small proportion of the total long-term fallout which will occur from previous tests has taken place to date. Thus, intensive surveillance must be carried out at least for the next few years. At the same time, major developmental programs are underway in the nuclear energy field which will continue to pose challenging problems to assure that adequate health protection measures are developed and applied to keep pace with these developments.

INCREASES REQUESTED FOR 1964

Briefly, our current budgetary situation and request for 1964 are as follows: Our current budget totals $15,787,961. For 1964, we are requesting $18,776,000, an increase of $2,988,039. The major elements of this increase are:

(*a*) In research, $1,314,000 of which $695,000 is in grants and $619,000 in direct operations and contract research;

(*b*) In assistance to States, $735,000 of which $500,000 is for program development grants and $235,000 is technical assistance;

(*c*) In laboratory and surveillance, $217,039; and

(*d*) In training, $222,000.

NEED FOR RESEARCH

The National Advisory Committee on Radiation, which provides major assistance to the Public Health Service in the assessment of the problems in the radiation field and in the development of programs to meet these problems, has repeatedly emphasized the need for intensive research in the field of radiological health, particularly to provide "scientific data for development of improved standards of radiation protection." This involves not only quantitative information on the relationship between radiation exposure and deleterious effects in man, but also knowledge of the feasibility, effectiveness, and safety of measures which can be taken to control and reduce exposures. We expect to make continued progress to provide this information, utilizing our own facilities, nongovernmental capabilities supported through contracts, and independent investigators supported by our research grants. The increase requested in direct operating funds will be used to augment our efforts in epidemiological studies of selected human population groups and supportive laboratory studies.

Our efforts to stimulate the development of comprehensive programs of radiation protection in State and local agencies were given major impetus by the $1.5 million in State program development grants appropriated by Congress last year. Fifty States and territories are now participating in this program on a 1-to-1 matching basis. The increase of $500,000 requested for this grant program in 1964 will provide additional stimulation to the States in the development of their programs.

The success of the dental surpak technique for use by State health agencies in detecting radiation hazards of dental X-ray machines has pointed to the need for similar techniques in the case of medical X-rays. Additional efforts will be devoted to this much more complicated problem during 1964.

Another element of our program in 1964, which will be of value in connection with State programs, is the augmented effort in our laboratory and surveillance work which we plan to devote to our quality control organization. By this means, uniformity of results will be promoted among the State laboratories as the States move to meet their responsibility for measurement and surveillance.

TRAINED PERSONNEL NEEDS

Another critical need in the field of radiation protection to which the National Advisory Council on Radiation has repeatedly drawn attention is that of an adequate supply of trained personnel to conduct radiation protection activities. Our program of training grants to institutions, now in its third year, has made significant progress in meeting the need for trained radiation health specialists. NACOR has pointed out that in order to make the most effective use of specialists, there should be available an adequate supply of technicians. The additional $500,000 requested for 1964 will permit us to move to meet this need. Additionally, we plan to augment our own short course training program, particularly with the view to presenting courses at a greater number of geographic locations.

Mr. Chairman and members of the committee, I shall be glad to expand on any of these points or answer any questions you may have.

INCREASES REQUESTED FOR 1964

Mr. Fogarty. All right. Taking comparative transfers into account, the appropriation for 1963 is $15,788,000 and the request for 1964 is $18,776,000, an increase of $2,988,000 and 18 positions.

CHANGE IN ESTIMATED FUND REQUIREMENT FOR 1963

Last year you requested a 1963 supplemental appropriation for $1,900,000. This, as well as many other requests of the Department for supplementals, was lost when the whole supplemental bill died when the 87th Congress adjourned. Most of the other requests were renewed this year but not one dollar is requested for this program in the supplemental requests recently sent to Congress. Why the change in attitude?

Dr. Chadwick. Well, I think part of it is the fact that some of the elements that were in the supplemental have been incorporated in the 1964 budget requests. Other than that, it is simply that a determination was made that it would not be submitted.

Mr. Fogarty. Did you make that determination? Did you suggest it?

Mr. Kelly. It was the Budget Bureau.

Mr. Fogarty. How much increased costs do you have in 1963 because of the Pay Act and increase in the commissioned officers' quarters allowance?

Dr. Chadwick. There was a total of $356,000 in 1964 which includes not only pay costs and quarters allowance but also annualization of 1963 positions.

Mr. Bersano. The amount of the 1963 pay costs is $163,000.

Mr. Fogarty. You aren't going to have to absorb any of that, are you, on top of not getting any supplemental?

Dr. Chadwick. That is absorbed.

Mr. Fogarty. Now you come back for an increase in 1964. I am not blaming you. But this is a pattern I have been complaining about. This, Mr. Kelly, is really an on-again, off-again approach. How can you plan a good program when you do not even know from month to month whether you are going to be pushed to expand the program or be required to cut back the program?

Dr. Chadwick. You mean in relation to budget or in relation to the shifting need, sir? I am not quite sure.

Mr. Fogarty. The budget.

Dr. Chadwick. Well, I suppose that is just part of it.

Mr. Fogarty. I know it is a difficult question for you to answer because this is something the Bureau of the Budget did. Was it because of these talks between the Soviet Union and this country?

Dr. Chadwick. I do not know, sir, whether that was part of it or not. It is conceivable.

Mr. Fogarty. If it was, they better take another look at things, had they not, in view of progress as of now?

Dr. Chadwick. There is no evidence to date that anything is going to happen.

Mr. Fogarty. I do not see any evidence that they have been very successful in these talks. Certainly I hope they will be, but the experience in the past does not give much encouragement.

RECOMMENDATIONS OF NATIONAL ADVISORY COMMITTEE

What recommendations did the National Advisory Committee on Radiation make last May?

Dr. CHADWICK. Well, they made a series of recommendations. One, on the program, as to the kinds of things we ought to do; and secondly, on the budget level that they felt might be required to carry out the program.

Mr. FOGARTY. How does that compare with your budget for 1964?

Dr. CHADWICK. Our budget request for 1964 is less.

Mr. FOGARTY. How much?

Dr. CHADWICK. They had recommended that we have a level of $25 million.

Mr. FOGARTY. Will you put in the record those recommendations and the additional amount it would take to carry them out?

Dr. CHADWICK. Yes, I will be glad to supply that.

(The material follows:)

NACOR in a report to the Surgeon General in May 1962 recommended "that the Service be provided funds adequate to meet its broad responsibilities in radiological health. The Committee estimates that the Service, in building toward a fully effective radiation control program, will require a budget of $25 million in fiscal year, 1962–63, and increasing amounts each year thereafter until an annual budget of $100 million is reached by 1970."

In order to reach the $25 million level, $6,224,000 would be required in addition to the $18,776,000 requested in the 1964 President's budget. The following statements are supplied in explanation of how these additional resources would be utilized.

Among its recommendations the Committee stated:

"Radiobiological studies of the relationships between environmental levels of radiocontamination and subsequent human exposure to ionizing radiation and research on the natural history of radiocontaminants in the human and his environment are additional areas requiring intensive research.

"In the field of countermeasures, the research demands are particularly great since countermeasures to control environmental contamination are in a relatively early stage of development. The research should be directed to methods which (*a*) improve the safety of radiation sources; (*b*) control the vectors by which radiocontaminants are distributed to the population; and (*c*) minimize or prevent the deleterious effects of radiocontaminants admitted to the body."

Conforming with that recommendation would require further resources of $3 million half of which would be devoted to support of additional research grants and the balance of which would be used for in-house and contract research designed to deal with the problems pointed out by NACOR.

NACOR also recommended "that the Service take immediate steps to expand its research and development programs in radiation control. In the field of surveillance, particular attention should be given to technical investigations to devise (*a*) improved methods of monitoring by which more rapid and detailed measurements may be made; (*b*) more reliable automatic surveillance equipment which can be operated with a minimum of highly technical manpower; and (*c*) standard techniques and methods which will yield consistently reliable results from laboratory to laboratory."

Meeting this need would require an additional $1 million.

In the area of technical assistance to State and local agencies "the Committee strongly urges that State and local public health laboratories rapidly assume an increasingly important role in the national surveillance effort. The Committee further recommends that the Federal Government provide early financial and technical assistance to achieve this goal. Full utilization of these laboratories will not only provide the broad radiation surveillance needed by the country but will do so at minimum cost, with least demand upon the Nation's scientific manpower and with maximum opportunity for those in the Federal Establishment to devote their attention to surveillance problems of national scope."

An additional $1,500,000 would be required to meet the needs stated in this recommendation, of which $500,000 would be in State program development grants and $1 million in direct technical assistance operations.

The Committee further recommended "that training programs for radiation health specialists and radiological technicians be fully supported and strengthened in the years ahead to assure an adequate supply of trained manpower to meet increasing national demands."

Reasonable progress in line with this recommendation would require an additional $724,000, $500,000 of which would be used to expand the problem of training grants to institutions and $224,000 to support short-course training.

Activity	Position	Amount
Grants		$2, 500, 000
Research		1, 500, 000
Training		500, 000
State program development		500, 000
Research, training and technical services	200	3, 724, 000
Research	65	1, 500, 000
Technical assistance	59	1, 000, 000
Laboratory and surveillance activities	64	1, 000, 000
Training	12	224, 000
Total	200	6, 224, 000

GRANTS TO STATES

Mr. Fogarty. I believe 1963 is the first year for State program development grants. You mentioned that.

Dr. Chadwick. Yes, sir; it is.

Mr. Fogarty. Is there anything else you want to add to what you have said?

Dr. Chadwick. Well, we have been encouraged by the extent to which the States have been able to use the money—at least been able to match the Federal funds and get programs going. There have been only two States in the country and the District——

Mr. Fogarty. What are the States?

Dr. Chadwick. Montana and Nevada. But other than that, all of the States have been able to match.

Mr. Fogarty. I would think Nevada would be very conscious of something like this and be one of the first to participate.

Dr. Chadwick. I do not know what the reason is.

Mr. Fogarty. Have you encountered any serious problems in getting the program started?

Dr. Chadwick. The State program development grant program? No, we have not. We feel that it has been very smooth.

Mr. Fogarty. I think if you only have two States that are not putting up matching funds, you are doing pretty well.

Dr. Chadwick. This is our feeling, too.

Mr. Fogarty. What is the percentage of matching required?

Dr. Chadwick. It is 1 to 1, which is also interesting in that this is a new program.

Mr. Fogarty. How much are you spending this year and what is the request for 1964?

Dr. Chadwick. In the State program development grants, we have $1.5 million this year, and are requesting $2 million for 1964, an increase of a half million.

Mr. FOGARTY. You mentioned that in your statement?

Dr. CHADWICK. Yes, sir.

INCREASES REQUESTED FOR 1964

Mr. FOGARTY. You have increases pretty much across the board. They are set forth on page 87. Would you place an explanation of these in the record?

Dr. CHADWICK. Yes, sir; I will be happy to do that.

(The material follows:)

Summary of increases requested, 1964

	Positions	Amount
Radiological health, total	18	$2,988,039
Grants, total	0	1,695,000
Research grants	0	695,000
Training grants	0	500,000
State program development grants	0	500,000
Research, training, and technical services	18	1,293,039
Research, total	0	619,000
Evaluation and planning	0	14,000
Field studies of methodology to improve total exposure assessment	0	9,000
Laboratory studies of the ecology of environmental contamination	0	9,000
Epidemiological field studies on specific problems	0	391,000
Exposure control and reduction	0	5,000
Supporting laboratory studies in correlating biological exposure to tissue damage	0	157,000
Public health preventive measures	0	20,000
Research grants administration	0	14,000
Technical assistance, total	8	235,000
Technical consultation	2	70,000
Special project development	6	165,000
Laboratory and surveillance activities, total	0	217,039
Radiological intelligence system	0	69,000
Instrumentation	0	3,000
Special contamination control operations	0	16,000
Laboratories and analytical services	0	125,039
Technical liaison	0	4,000
Training, total	10	222,000
Technical short-term training	8	147,000
Extramural training and materials development	2	54,000
Advanced academic training	0	21,000

GRANTS

RESEARCH GRANTS

The requested increase will permit continuation of grants active in 1963 and the award of 34 new grants in 1964. This increase will permit a greater utilization of nongovernmental research capabilities in the solution of various scientific problems for which answers are needed as a basis for program activities. Examples of the type of work to be supported from grant applications recently received and approved as technically sound and worth while include (1) research studies of radiostrontium metabolism and the method for the removal of radiostrontium from man, (2) effects of X-ray and radiomimetic agents on white blood corpuscles of the lymph glands, and (3) research among antimitotic chemicals that will afford protection for man against radiation.

TRAINING GRANTS

The requested increase in training grants to institutions will permit, for the first time, grants to support radiological health technician training. To date the funds available for this grant program have been utilized to support training of radiological health specialists. Since the National Advisory Committee on Radiation estimates that radiological health programs in the United States require 3 to 4 technicians for each specialist, and that 4,000 such technicians will be required by 1970, it is important that this program be expanded to include support of technician training.

STATE PROGRAM DEVELOPMENT GRANTS

This program was initiated in 1963 to stimulate development of comprehensive radiological health programs in the States by providing grant funds on a 1-to-1 matching basis. To date, 50 States and territories are participating in the program. The increase requested in 1964 will permit further improvement and expansion of these new State programs at a time when it is most needed.

RESEARCH

The success of any public health program is dependent in large measure upon the extent and quality of its research activities. The Division of Radiological Health carries on an extensive program of research to determine more precisely the effects on man of various levels of radiation exposure and to determine ways and means of minimizing radiation exposure or its effects on the population of the country. From this research will come the important data as a basis for adequate radiation protection standards for the Nation. The increased funds requested for research will be applied in two key areas:

(1) Epidemiological studies of selected human population groups to determine the relationship between radiation exposure and deleterious effects.

An example of the work being performed in this area is a project that has been in the feasibility stage in 1963 to evaluate populations receiving radioiodine in the microcurie range for diagnostic purposes. This involves an enumeration and followup on infants and children, whose thyroid function is determined by use of radioiodine, to discern in these children, the delayed appearance of thyroid cancer. Supporting dosimetry studies on the kinetics of radioiodine metabolism in certain selected children have been started. In 1964 the field epidemiology phase of the study will be initiated in pilot form. Another example is the thymus irradiation study in which a start was made in 1963 to obtain data on infants and children who received X-ray therapy doses for benign head and neck diseases and lymphoid diseases. This study will define internal dosimetry to structures of the body among children irradiated in this manner. The study will provide a more firm estimate of the thyroid dose to children who developed thyroid cancers. The study will be continued and expanded in 1964. In addition, a new study will be started to survey in a midwestern city a group of approximately 1,000 persons who received whole body X-ray irradiation during infancy and childhood.

(2) Supportive laboratory studies to better define effects of radiation dose to critical human tissues and organs and to provide indices of radiation damage essential to evaluation of radiation effects in man.

An example of research to be done in this area in 1964 is a projected experiment on young and adult beagles which will involve a comparison of internal radiation from iodine 131 and external radiation in the production of tumors of the thyroid gland. Such comparisons of iodine 131 and external radiation are important since present standards on iodine 131 are based on external X-ray data only, whereas direct information on biological effects of internal radiation from iodine 131 is needed. Other studies in 1964 will be started to develop methods of detecting latent damage from low levels of radiation exposure before the occurrence of such biological end point as cancer and leukemia. Selected mechanisms will be systematically investigated and their usefulness as biological dosimeters evaluated. In 1963 the Division initiated intramural dose effects studies at laboratories in Rockville and specific indicators were studied. In 1964 we expect to apply this capability to the techniques of histopathology, tissue culture and transplant, hematology, bone analysis, and chromosomal aberrations.

TECHNICAL ASSISTANCE

A major goal of the radiological health program is to stimulate development of comprehensive State and local programs of assessment and control of radiation exposure from all sources. A key element in this effort is the program's technical assistance to State and local authorities by means of technical consultation and special project development. The increase will provide for the continuation and expansion of the dental X-ray program through wider application of the dental surpak technique. The increase will also provide for an accelerated program for the development of inspection and compliance techniques for medical diagnostic X-ray units. In addition, two more demonstration teams will be formed, and technical and consultative services to the States will be gradually increased in order to assist the States in establishing or strengthening their X-ray programs as well as general development of their total radiological health programs.

LABORATORY AND SURVEILLANCE ACTIVITIES

The increase requested for this activity will provide for the continued development of the radiological intelligence system from which, when fully developed, the Division will be able to obtain a complete picture of radiation exposure to our population from the many sources of ionizing radiation. In addition, the increase will provide for the strengthening of the Division's laboratory capability and the improvement in the quality control program to assure validity of the results both from Division laboratories and participating State laboratories.

TRAINING

To assist in overcoming the shortage in supply of qualified personnel to meet the manpower demands of the total national radiological health effort, the Division conducts an extensive training program for Federal, State, and local radiological health personnel. The increase will provide for additional specialized radiological health short-course training with emphasis on training in field locations to permit greater participation by State and local workers. In addition, the increase requested will provide for expanded training support services such as the preparation of course manuals, texts, handbooks, and provision for audio and visual aids.

PROTECTING MAN AGAINST RADIATION

Mr. FOGARTY. What progress are you making in developing methods to protect man against radiation?

Dr. CHADWICK. Well, I think we are making encouraging progress. I think there is a good deal more work that needs to be done but one of the outstanding things that has developed during the last year was the demonstration of the effectiveness of the switching of cattle to stored feed to cut down the amount of radioiodine intake. This was a cooperative program between the Public Health Service and the Department of Agriculture, where we set up three experiments comparing the radioiodine content of milk of those cows on pasture versus those in the barn on stored feed, and then after observing that, switched them back again and found that in each case the radioiodine content of those on stored feed was negligible, whereas those on pasture was, depending on the ambient levels in the environment, greater. This does show a technique whereby, when necessary, you can virtually eliminate the intake of radioiodine. I think that is probably the most——

Mr. FOGARTY. Did you have any dangerous areas or what you consider dangerous?

Dr. CHADWICK. The definition of "dangerous" is a difficult one in this field because, according to the policy of the Federal Radiation Council, any amount of radiation exposure involves some risk and it is a matter of deciding at what point this risk is high enough to warrant action. It was the feeling of the Federal Radiation Council that levels that had been encountered to date did not justify any action.

EFFECT OF PROGRAM ON PRICE AND CONSUMPTION OF MILK

Mr. FOGARTY. Do any of these programs you have in connection with milk have any effect on the cost of the milk anywhere?

Dr. CHADWICK. There was a demonstration program in the State of Minnesota at the end of August and early September, in which the milk producers switched to stored feed in order to prevent any additional radioactive iodine content in the milk and at that time there was, we understand, a 1-cent increase in the cost of milk passed on to the consumer.

Dr. TERRY. A cent a quart.

Dr. CHADWICK. One cent a quart. However, we have figures from the Department of Agriculture showing the fluid milk sales for that period in that area were greater in 1962, the year that this action took place, than the year before. There did not appear to be any effect on consumption.

RADIOLOGICAL INTELLIGENCE SYSTEM

Mr. FOGARTY. What do you mean by "radiological intelligence system"?

Dr. CHADWICK. The radiological intelligence system, when fully developed, will be a system to bring together all of the information on radiation exposure from all sources, in order to give a population radiation exposure based on all of the different sources. At the present time, this program is in a developmental stage and what we are operating on now is a series of individual determinations of individual sources of radiation exposure. As the radiological intelligence system works out the techniques for getting this integrated system, we would switch to that approach.

It will bring together environmental exposures from such things as fallout, medical X-ray exposures, occupational exposures, and so on, and give a total exposure picture, rather than just individual pieces.

Mr. FOGARTY. When will this system be fully developed?

Dr. CHADWICK. Well, that is rather difficult to predict because, of course, it depends upon the speed with which we are able to go.

Mr. FOGARTY. At what speed are you going to go in 1964?

Dr. CHADWICK. Well, there is a relatively modest increase.

Mr. FOGARTY. There is not much increase?

Mr. BERSANO. $69,000.

Mr. FOGARTY. That would not even cover your increased costs, let alone expand the program, I would guess.

Mr. BERSANO. Primarily for the mandatory pay costs and equipment.

Mr. FOGARTY. No increase in program at all, is there?

Dr. CHADWICK. Not really.

REGIONAL LABORATORIES

Mr. FOGARTY. How many regional laboratories do you have?

Dr. CHADWICK. It depends on how we define it. We have three that are exclusively radiological health laboratories.

Mr. FOGARTY. Where are they?

Dr. CHADWICK. Las Vegas, Nev.; Montgomery, Ala.; and Winchester, Mass.

We share the facilities at the Sanitary Engineer Center in Cincinnati and we have a headquarters facility in Rockville.

Mr. FOGARTY. Do you think you ought to have some more?

Dr. CHADWICK. Well, we at one time had felt that an additional regional laboratory would be helpful.

Mr. FOGARTY. Where?

Dr. CHADWICK. We did not have a specific location, but we thought of having it somewhere in the Middle West area to cover the Middle West and northwestern part of the country. The closer the laboratory is to the States the easier it is for a State to get its own people in to rotate through the laboratory and receive on-the-job training. This is one of the things we do in the regional laboratories, to help the States develop their own capabilities to do the kind of intensive surveillance that is necessary within a State to define areas where the levels may be high enough to justify some preventive measures.

REDUCTION IN BUDGET REQUEST

Mr. FOGARTY. Have you given up on that laboratory?

Dr. CHADWICK. Well, it is not in our budget request.

Mr. FOGARTY. Did you ask for it originally?

Dr. CHADWICK. Yes, sir.

Mr. FOGARTY. Who cut it out? The department or the Bureau of the Budget?

Mr. KELLY. I do not recall.

Dr. CHADWICK. I am not exactly certain where it was cut out up the line.

Mr. FOGARTY. You can supply that for the record.

(The material follows:)

The Division of Radiological Health preliminary estimate for 1964 included $400,000 for the establishment of a midwestern Radiological Health Laboratory. Based upon the departmental allowance, we were unable to include this proposal in our request to the Bureau of the Budget.

SURPAK TECHNIQUE FOR CHECKING X-RAY MACHINE SAFETY

Mr. FOGARTY. What is the surpak you talked about?

Dr. CHADWICK. Surpak?

Mr. FOGARTY. What is that?

Dr. CHADWICK. That is a film, an X-ray film in a packet that can be mailed out to a dental office and exposed by the dentist with his dental X-ray machine, following the instructions that are sent along and mailed back into the laboratory. From that film it is possible to tell two of the most important characteristics of the machine from the point of radiation safety: The size of the useful beam; and amount of filtration. It obviously permits one to do a much larger number of surveys of X-ray machines than you could do if you had to visit each installation and actually do a physical inspection. It can be done all by mail order.

EXTENT OF SURPAK SURVEY

Mr. FOGARTY. How well are these surveys being carried out in the States?

Dr. CHADWICK. Very well. We have had some 50,000 dental X-ray machines, or about half of the total surveyed by the State health departments, using the surpak.

Mr. FOGARTY. Why have not the other half gotten in the survey?

Dr. CHADWICK. Well, it is just the resources available to put into the task.

Mr. FOGARTY. Why would they not be able to? I would think it would be a hundred percent, rather than fifty percent.

Dr. CHADWICK. Well, it certainly is a technique which does not place terribly large demands on the program; in other words, we do the processing of the firms ourselves. The State sets up the survey and does all of the survey work.

Mr. FOGARTY. How about Rhode Island? Has Rhode Island done anything in this area?

Dr. CHADWICK. Yes, they have done the surpak program.

INCREASE IN MEDICAL X-RAY PROTECTION PROGRAM

Mr. FOGARTY. You mentioned in your statement you are going to do more in medical X-ray protection?

Dr. CHADWICK. Yes, to date the techniques that have had to be used in medical survey work have been on-the-site survey. This, of course, is a good deal more time consuming and requires much greater resources. If possible, we would like to develop some technique which would shortcut some of the effort that is necessary, and this is the developmental work which we are trying to do right now.

Of course, the problem in the medical X-ray machines is much more complicated because whereas in the dental machine you essentially have the same type of exposure and the same field size and same size of the beam, in the medical X-ray one moment you may be taking a 14-by-17 film of the chest, and the next moment you are taking a film of the hand, which would require a smaller field. So it is vastly more complicated to insure that proper radiation safety techniques are put into practice in this matter of medical X-rays than it is in dental, because it just is not standardized the way it is in the dental machine.

The most important characteristic, of course, is the beam size: making certain that for a given X-ray exposure, only the amount of the body that is actually being examined by the film is exposed to X-rays. In some instances, of course, the machine, although it is actually taking a film of the chest, because of inadequate beam limitation on the machine is producing an exposure extending throughout a large proportion of the body, for instance, including the gonads, the genital area. This, of course, tremendously increases the amount of exposure and obviously the risk from radiation exposure.

Mr. FOGARTY. Are you making any headway in this?

Dr. CHADWICK. Yes, sir, we are certainly making headway. There are a number of active programs and we have estimated about 15 percent of the X-ray machines in this country have been surveyed by the State and local health agencies, ofttimes with our help.

Mr. FOGARTY. How is Rhode Island doing in this area?

Dr. CHADWICK. They have done some medical X-ray inspections. We have sent out some filters for medical X-ray machines.

INTERAGENCY RADIOLOGICAL ASSISTANCE PLAN

Mr. FOGARTY. What is the interagency radiological assistance plan, mentioned on page 112?

Dr. CHADWICK. This is a plan set up to deal with radiation emergencies, such as accidents in the transport of radioactive material; and it is an effort to bring to bear on any given accident the resources of all the Federal agencies that have capabilities in this area. Of course, the principal ones are the Defense Department, AEC, and the Public Health Service.

INTERAGENCY RESPONSIBILITIES IN FIELD OF RADIOLOGICAL HEALTH

Mr. FOGARTY. That leads to my last question. Many agencies are doing work in the field of radiology. Will you prepare for the record a statement setting forth what portion of the whole field is assigned to each, and what mechanisms there are to assure that there is no undesirable duplication?

Dr. CHADWCK. Yes, sir, we will prepare that.

(The material follows:)

INTERAGENCY RESPONSIBILITIES AND RELATIONSHIPS IN THE FIELD OF RADIOLOGICAL HEALTH

In most health problems—the various communicable diseases, for example—the governmental agencies primarily concerned are public health agencies, and health protection is the primary consideration in the development of governmental policies and programs.

Recent decades have brought to the fore a new class of environmental health problems such as air and water pollution and ionizing radiation which has required that we change our approaches to these new health problems. The development of environmental health programs to cope with these problems involves the activities of many governmental agencies, and industry, labor, and other nongovernmental interests. Viewed from the standpoint of a health agency, the health of the people is paramount. However, it is recognized that the health aspect may not always be the governing consideration in the development of national programs concerned with the use of potentially dangerous substances, but must be weighed in relation with other considerations bearing on the national interest.

In no area of environmental health is this more evident than in the field of radiological public health.

What follows is a necessarily brief review of the programs of the Federal agencies having important responsibilities in radiation, and of the mechanisms that have evolved to provide essential coordination of standards, policies, and program effort among those agencies and for the Federal Government as a whole.

Dominating any present consideration of radiation is the simple fact that our national security is based largely upon weapons which produce massive amounts of nuclear radiation. Thus, the Department of Defense has very great and far-reaching responsibilities in this field. To fulfill these responsibilities the Department of Defense must develop nuclear weapons and test them, and it must be able to predict with some degree of accuracy the amounts of radiation produced by these devices either in testing or in warfare, and the effects on both military and civilian populations which may be exposed.

Rigid safety standards must be developed and imposed not only for the storage and use of such weapons and devices but also upon a variety of other radiation sources required in the functioning of the Department of Defense, including nuclear reactors and their fuels and the industrial and medical usage of X-rays and radioisotopes in its facilities.

Necessarily extensive research and development programs and monitoring of radioactivity produced by these devices and materials must be conducted by the Defense Department in discharging its responsibilities.

The responsibilities of the Atomic Energy Commission are even more varied and complex and equally as important as those borne by the Department of Defense. They encompass not only the production of the nuclear components of military weapons and, in some instances their propulsion units, but also the peaceful usages of nuclear power and radioisotopes it produces.

AEC operates directly a number of reactors for experimental purposes and the production of power. It licenses and regulates a growing number of reactors for operation by university and industrial organizations, and it produces the basic nuclear fuels required for all weapons, nuclear propulsion systems, and reactors.

A highly important aspect of fuel production and reactor operations is the disposal of radioactive waste products in a manner that will insure against their contaminating the environment in which millions of people live. Equally important is the enforcement of regulations to protect against hazardous exposure of population groups and of those who work with radiation-producing sources under the control of the AEC, while the radiation is being produced by those sources.

Extremely complex technical questions are inherent in every aspect of these operations. Such questions can only be solved by an equally complex program of basic and developmental research which utilizes virtually every discipline of biological and physical science.

Finally, AEC conducts surveillance programs from which, together with specialized laboratory and field research, it must be able to predict the effect of radiation exposures upon human health for whatever period such exposures can be related directly to sources under AEC control.

Two constituents of the Department of Health, Education, and Welfare have major, related responsibilities for protecting the general public against unnecessary or undue exposure to radiation. These are the Food and Drug Administration and the Public Health Service.

There are more than 200,000 X-ray and fluoroscopic machines in hospitals, clinics, and the offices of physicians and dentists of this country. A recently published national health survey revealed that about 85 million visits to medical X-ray facilities and 49 million visits for dental X-rays were made during 1961. This one source of human exposure to radiation serves as an indicator to why the Public Health Service is deeply concerned with the increasing sources and amounts of radiation exposure the population is receiving.

A first requirement in the relatively new field of radiological public health is adequate measurement of the exposures received by the general public from all radiation sources. In addition to X-rays, these include nuclear test fallout, isotopes, radioactive wastes, and natural sources such as radium. Together, these sources have given varying degrees of exposures to every person in the Nation. Their measurement requires extensive facilities for laboratory analysis of biological materials and for field surveys.

Another Public Health Service responsibility is to develop effective methods to prevent, reduce, or ameliorate the effects of such general population exposures. This requires laboratory and field research and demonstrations conducted directly or in cooperation with other Federal agencies, universities, the States, and with agriculture and industry.

As in other health problems involving large populations throughout the country, effective control depends upon building radiological health capability within the States. To this end the Public Health Service provides the States with technical advice and assistance, helps train technically qualified personnel, conducts demonstrations, and provides financial assistance.

Growing emphasis is being placed on research to determine the effects of radiation on various groups within the general population and upon more economical, accurate, and rapid methods of estimating human exposures from the many different sources and kinds of radiation.

Laboratory, clinical, and epidemiological research is conducted both directly and through grants and contracts on the effects of radiation on biological systems and on new or improved diagnostic and therapeutic usages of radiation in clinical medicine and public health.

An important responsibility is provision of technical assistance to other Federal agencies engaged in activities which may produce radiation exposures to general populations. This includes surveillance and laboratory analysis, and liaison with the State and local public health agencies affected.

Finally, the Public Health Service serves the entire executive department as a focal point for the collation, analysis, and interpretation of environmental radiation data obtained from a variety of Federal and non-Federal surveillance systems.

The Food and Drug Administration has statutory responsibility for enforcement activities to prevent interstate shipment of foods, drugs, and cosmetics deemed hazardous to health under officially accepted standards for human exposure. This agency must also approve radioactive drugs intended for legitimate use in diagnosis and treatment.

A partially related function consists of inspection and enforcement activities related to fraud and quackery in the use of of foods, drugs, or cosmetics alleged to be beneficial because of their radioactive properties.

To carry out these responsibilities effectively, FDA must constantly measure radiation levels in foods, drugs, and cosmetics which may enter interstate commerce. It must also conduct a considerable amount of laboratory and field research related to these programs.

The Department of Agriculture is another agency having significant responsibilities which are affected by radiation in the environment. Because of its interest in maintaining production of wholesome food products, the Department is concerned with techniques which will prevent or reduce radioactive contamination of those products. Research to accomplish this and to develop new and better farm products through mutations caused by radiation techniques are among the program areas.

The Department of Commerce through its Weather Bureau has the important Federal function of predicting atmospheric transport and deposition of fallout from nuclear testing. The development of standards for the physical measurement of radiation is another function of the Department of Commerce carried out by the National Bureau of Standards of the Department. The Maritime Administration is responsible for development of nuclear powered cargo and passenger vessels.

The Department of Labor is concerned with radiation exposure to the Nation's labor force, and in particular those workers who for any reason may not come under the protective standards enforced directly or through the States by AEC.

There are several other agencies having some responsibilities or program interest in certain aspects of radiation : The Federal Aviation Agency, for example, is concerned with exposures of passengers and air and ground crews to radioactive debris in the atmosphere; Interstate Commerce Commission with the safety aspects of shipments across State lines of radioactive materials; and the U.S. Post Office with the safety aspects of radioactive materials transmitted by mail.

In 1959 it had become apparent that with so many Federal programs concerned with radiation usage and its effects on man, uniform standards relating to acceptable radiation exposures were needed. To achieve this purpose the Federal Radiation Council was created by Presidential Executive order that year to centralize Federal responsibility for providing general standards and guidance to executive agencies for their use in developing operating rules and regulations for radiological health protection. As presently constituted, the Council includes the Secretaries of Health, Education, and Welfare, Defense, Agriculture, Commerce, and Labor, the Chairman of the Atomic Energy Commission, and the President's science adviser.

In addition, the Council advises the President on major questions involving radiation protection, and serves to promote coordination of high level radiation policies and program decisions among all Federal agencies.

The Interagency Committee on Radiological Assistance has developed a plan whereby various Federal agencies can provide rapid and effective action, coordinated with activities of State and local health, police, fire, and civil defense agencies, to cope with radiological incidents.

The two programs having the greatest common interest in radiation exposures which might affect the general public are those operated by the Atomic Energy Commission and the Department of Health, Education, and Welfare, the Public

Health Service in particular. In recent years a number of mechanisms have been developed to further coordination of policies and operating programs. The objection has been not only to avoid conflict of purposes and unnecessary duplication of effort, but also to insure that their respective activities supplemented and supported each other to the greatest degree possible.

For top policy decisions the Chairman of the Atomic Energy Commission and the Secretary of Health, Education, and Welfare meet when required. Continuing discussions at this level are maintained by "policy designates" consisting of a high-level staff member of each agency appointed for this specific purpose. These "policy designates" meet whenever necessary to settle policy and operational problems which have arisen within the framework of the general guidelines of the Council or the top policy decisions of the AEC Chairman and the Secretary, HEW.

A joint AEC–PHS radiobiology research group meets each month to exchange current information of mutual interest concerning a variety of topics, including population exposures and progress in biomedical research.

Special project technical meetings are held between operating technical personnel from the two agencies whenever either group feels that coordination of effort or exchange of information is needed for specific technical projects.

Mr. FOGARTY. Is there anything else you want to say?

Dr. CHADWICK. No, sir.

Mr. FOGARTY. Thank you very much, Doctor.

WATER SUPPLY AND WATER POLLUTION CONTROL

WITNESSES

GORDON E. McCALLUM, CHIEF, WATER SUPPLY AND WATER POLLUTION CONTROL
MATTHEW PILZYS, FINANCIAL MANAGEMENT OFFICER
DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER
JAMES M. QUIGLEY, ASSISTANT SECRETARY

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	4,454	6,668	8,203
Positions other than permanent	238	248	267
Other personnel compensation	7	8	66
Total personnel compensation	4,699	6,924	8,536
12 Personnel benefits	654	942	1,161
21 Travel and transportation of persons	698	823	1,065
22 Transportation of things	110	123	197
23 Rent, communications, and utilities	236	276	473
24 Printing and reproduction	145	195	275
25 Other services	423	475	648
Research contracts	610	720	810
Services of other agencies	427	560	655
Payment to—			
Bureau of State Services management fund	898	1,181	1,449
National Institutes of Health management fund	32	43	56
26 Supplies and materials	463	668	744
31 Equipment	1,095	1,536	1,548
32 Lands and structures	20		
41 Grants, subsidies, and contributions	8,361	10,185	12,363
Total obligations	18,870	24,651	29,980

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	930	1,138	1,382
Full-time equivalent of other positions	38	38	41
Average number of all employees	752	1,059	1,293
Number of employees at end of year	954	1,200	1,450
Average GS grade	7.8	7.7	7.8
Average GS salary	$6,645	$7,074	$7,032
Average salary of ungraded positions	$5,031	$4,849	$4,900

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Grants:			
(*a*) Research	2,670	3,285	4,288
(*b*) Fellowships	98	300	450
(*c*) Training	700	1,100	2,000
(*d*) Control programs	4,593	5,000	5,000
(*e*) Demonstration	300	500	625
2. Research, training, technical services, and enforcement	9,920	14,466	17,617
Total program costs, funded [1]	18,281	24,651	29,980
Change in selected resources [2]	589		
Total obligations	18,870	24,651	29,980
Financing:			
Comparative transfers to other accounts	8		
Unobligated balance lapsing	1,392		
New obligational authority	20,270	24,651	29,980
New obligational authority:			
Appropriation	20,328	24,707	29,980
Transferred to (−)—			
"Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353 and 76 Stat. 728) (−)	−24	−56	
"Salaries and expenses, Office of the Surgeon General" (42 U.S.C. 226)	−34		
Appropriation (adjusted)	20,270	24,651	29,980

[1] Includes capital outlay as follows: 1962, $571,000; 1963, $1,536,000; 1964, $1,615,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $248,000 (1962 adjustments, $32,000); 1962, $869,000; 1963, $869,000; 1964, $869,000.

Mr. McCallum. Mr. Chairman and members of the committee, I have a prepared statement which I would like to file for the record. With your permission I will summarize this statement.

(The statement follows:)

Mr. Chairman and members of the committee, water is becoming increasingly recognized as the Nation's No. 1 natural resources problem, not only by the responsible governments but by our citizenry as well. The development, conservation, and protection of the Nation's water resources continue as matters of highest priority in insuring the continued national health, welfare, and economic growth.

Within the framework of water resources programs, those concerned with the restoration, conservation, and protection of water quality through pollution control are of major importance. More of our vital water resources can be made available for use by controlling pollution than by any other means.

The Federal Water Pollution Control Act, as amended, provides a broad base for dealing with both the water resources development and health aspects of water pollution prevention and control. The act requires the Secretary to carry out major programs of water quality management and authorizes other important activities that supplement and support the programs of State, interstate, and local agencies, as well as the directed Federal programs.

The 1964 budget request is $29,980,000, an increase of $5,329,000 over the 1963 budget. The programs this amount will support are designed to continue implementation of the requirements of the act, and to be responsive to recommendations made by the many advisory, regulatory, conservation, civic, and other groups supporting water pollution control.

Some 41 percent of the increase, or $2,178,000, will be used to support growth of research and training programs in universities and other qualified institutions. Most of this amount ($1,903,000) is for research and training grants, programs that are growing rapidly in response to the urgent need to accelerate research and the training of much-needed scientific and engineering manpower. The requests for fellowships and demonstration grants will also contribute toward meeting these needs.

This request also contains a 37-percent increase, or $1,972,000, for the development of comprehensive programs for the control of water pollution in river basins. This amount will provide for expansion of four continuing major projects and the initiation of four new ones. It will also support expansion of the important basic planning program and streamflow regulation activities for water quality control.

Another 13 percent of the increase, $709,000, is requested to continue the orderly growth of the Federal enforcement program and assistance to State regulatory agencies. Enforcement is an integral part of any effective water pollution control program. The Federal program is proving effective not only in achieving needed remedial programs, but in stimulating States to proceed under their regulatory powers and in the public awareness to pollution problems that it generates.

The remainder of the requested increase, $470,000, will be used to consolidate our gains in direct research, collection and dissemination of basic data, technical assistance to others, and for administrative services in connection with construction grants and research and training grants.

RESEARCH GRANTS

An increase of $1,003,000 is provided for research grants, bringing the total request of $4,288,000. These grants are expanding water research activities throughout the country by encouraging and supporting investigators and institutions to conduct research in water supply and pollution control.

The report of the Subcommittee on Water Supply and Pollution Control, prepared for the Gross committee in 1961, concluded that "water supply and pollution control problems are becoming increasingly diverse and complex, and the development of knowledge has not kept up * * *. The Federal research program needs to be expanded and extended by full use of grant-supported extramural research programs."

The research supported covers a broad spectrum of water pollution problems. In 1962, the last year of complete record, 17 percent of the funds were awarded to scientists conducting research on waste disposal and assimilation; 16 percent was spent for conservation-oriented research; 16 percent was devoted to microbiological research; and 15 percent was awarded for research on wastes collection and treatment. The remaining 36 percent was for research on analytical methods, water treatment, and water resources development.

The requested increase in research grant funds will accelerate the expansion and extension of research in water supply and water pollution control, and attract more of the Nation's research potential into this important field. The increased flow of research information is vital to the early solution of the Nation's intricate and changing water problems.

TRAINING GRANTS AND FELLOWSHIPS

Increases of $900,000 and $150,000, respectively, are provided for training grants and research fellowships, bringing these to totals of $2 million and $450,000. The impact of accelerating research by the military, industry, and other water resources agencies makes urgent the need for specialized training of engineers, sicentists, and others in water pollution control. Training grants and fellowships are designed to support qualified graduate students and to develop or improve curriculums of academic institutions to better train individuals in the complex field of water quality management.

The training grants and fellowships, implemented for the first time in 1962, are already successfully broadening the graduate training resources of teaching institutions and attracting a growing number of able people to this field.

Applications already on hand in 1963 show that the training grants program will continue to grow in 1964.

This 1964 request is in line with the recommendation of the Gross committee for an expanded program.

WATER POLLUTION CONTROL PROGRAM GRANTS

The request for grants for State and interstate water pollution control programs is $5 million, the amount authorized under the act.

Since the grant program was initiated in 1957, the States have more than doubled their own appropriations for water pollution control programs (1956 expenditures, $4.2 million; 1963, $9.9 million). This period has seen the development of expanded programs in States which had only minimal activities before. Those States which already had organized programs have progressed into more comprehensive activities.

An encouraging trend resulting from program grants is the increased emphasis being placed by State water pollution control agencies on surveillance of the operation and maintenance of waste treatment works, and the training of the treatment works operators. A great deal of pollution control is effected when treatment plant efficiencies are raised for 70 to 90 percent.

Water pollution problems of collective interest to particular States are also receiving attention. For example, Maine, North Dakota, and Idaho water pollution control agencies are conducting studies of potato processing wastes. A number of States are attacking such problems as laundry wastes, aquatic nuisance control, pollution from pleasure boats, and textile wastes.

While recruitment continues to be an obstacle to program expansion, a number of States have recently reported that, with the availability of program grants. they have been able to fill long-existing vacancies, or establish and fill new positions for scientific and technical personnel. This foretells continuing improvement in State efforts in carrying out their primary responsibility for water pollution control.

DEMONSTRATION GRANTS

Demonstration grants are designed to bridge the gap between research discovery and its application to actual pollution problems. By demonstrating the feasibility of a method, process, procedure, or operation, the time between its research discovery and practical application is greatly reduced.

Without demonstrations, it is usually as much as 10 years before research findings are put to work. Since they usually work with public funds or other people's money, designing engineers and administrators are generally reluctant to use new ideas unless they have been proven to be practical and feasible. The cost of delay in putting research finding into practical use can be measured in money and pollution control effectiveness, both in very substantial amounts.

A special feature of demonstration grants is that the organizations and agencies applying for them are willing to finance major portions of the proposed projects. Interest and support for these grants is widespread and growing. Many scientists and administrators believe that practical demonstration of a research finding is almost as important as the original research.

The budget request of $625,000 will provide for 16 demonstration grants in 1964 of which the requested increase of $125,000 will support 3 new ones. These 16 grants will be underwriting projects demonstrating a wide variety of new ideas for detecting, measuring, and controlling water pollution.

COMPREHENSIVE PROGRAMS FOR WATER POLLUTION CONTROL

The development of comprehensive programs for controlling water pollution in river basins is probably the most important long-range program required by the Federal Water Pollution Control Act. These very complex programs are projected over a period of 50 years and are designed to insure adequate water quality for the maximum number of desired water uses, including public water supplies, propagation of fish and aquatic life and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses.

The increase requested will make possible expansion of the Chesapeake Bay-Susquehanna River Basin project, the Columbia River Basin project, the Delaware River estuary project, the Upper Ohio River Basin project, and basic program and flow regulation activities. It will also enable the initiation of four new comprehensive water pollution control projects, the Tristate project in the metropolitan area of New York and the Hudson River Basin; the New England River Basins project to begin in the Connecticut River Basin; the Southeastern River Basins project to begin in the Flint-Chattahoochee-Apalachicola Basin; and the Lower Missouri River Basin project.

The intensive phase of the Arkansas-Red River Basins project is being completed in 1963; a small monitoring and surveillance program will be maintained in 1964. The report on the Arkansas-Red River Basins project will be ready for submission to the current session of the Congress. It will delineate the sources and extent of pollution, the expected results of control measures recommended to improve water quality, and the monetary and social benefits to result from carrying out the report's recommendations. This report will mark the end of the first phase of the development of a major basin water quality management program and will indicate how a very large amount of water can be reclaimed for use in the semiarid southwestern regions of Texas, Oklahoma, and Kansas. It marks the beginning of a new era in water conservation practice.

The Great Lakes-Illinois River Basin project is now in full operation and proceeding on schedule. Although expenditures for this project will decrease because of a reduction in equipment needs, personnel will be added to intensify the comprehensive studies required to keep this large and complex project on schedule. As the project has progressed, reports on the findings, improvement measures, and results have been furnished to the Department of Justice for use in connection with litigation on control of Lake Michigan water and related matters now before the Supreme Court. Instrumentation has been developed and purchased, and is being installed in Lake Michigan to determine the nature of the movement of water within the lake system. Precise data on water movement is necessary to evaluate the proposal that wastes from the Chicago metropolitan area be discharged to the lake. The factual information provided in this intensive investigation will have far-reaching effects on national water policy. A project field station has been established in Cleveland, Ohio, to begin work on Lake Erie and along the contributory watershed in Ohio, Indiana, Pennsylvania, and New York. The work on Lake Erie will be intensified in 1964 and reconnaissance engineering and laboratory studies of Lake Ontario and Lake Huron will begin.

The Chesapeake Bay-Susquehanna River Basin project will expand to the $900,000 level in 1964. Intensive activities in 1964 will be concentrated in the Susquehanna portion of the project area. Chemical, biological, and physical studies in the Potomac estuary will also be initiated. In 1963 funds have been used to initiate an economic base study and to complete a large portion of basic data inventory compilation.

The budget proposes an expansion of the Upper Ohio River Basin project from the $100,000 to the $500,000 level in 1964. Intensive field and laboratory work in 1964 will be concentrated in the upper basin area. A project headquarters office for this project has been established in Wheeling, W. Va., and early in 1964 a field laboratory will be added.

In 1964, the Delaware River estuary project will reach its peak of activity. Studies of the tidal currents in the estuary and of stormwater overflow will be made. Dye studies and industrial waste sampling will continue. A mathematical model will be constructed to describe the effects of the wastes on water quality.

The Columbia River Basin project will also expand in 1964. Field investigations along the Yakima, Upper Snake, and Central Snake Rivers will be completed and new studies of other rivers in the area will be initiated. A major objective in the Pacific Northwest is the development of preventive programs in contrast to delaying action until streams are polluted and more costly and difficult corrective programs are required.

The $389,000 increase requested for basic program and flow regulation studies will permit the Public Health Service to carry out the responsibility in the act to supply advice to other Federal agencies on the need for and the value of storage in Federal reservoirs for water quality control purposes. During 1964 these funds will permit these determinations for an estimated 160 new and continuing reservoir projects sponsored by Federal construction agencies.

With the initiation of four new projects in 1964, comprehensive water pollution control projects will encompass 11 of the 21 major basin areas into which the Public Health Service has divided the Nation for the purpose of this program. With the initiation of the New England and Tri-State Metropolitan projects, comprehensive programs will be under development for the entire heavily populated Northeast area of the United States. Initiation of the Southeastern and Missouri River Basin projects will extend comprehensive coverage to the Southeastern portion of the Nation and much of the Midwest portion.

The current target year for completion of the intensive phase of all comprehensive water pollution control programs is 1974. The present schedule will make possible what is believed to be the optimum rate of expansion and contraction in comprehensive planning during the next 10 years. All comprehensive projects will be underway by 1970 and 60 percent will be completed.

ENFORCEMENT

Enforcement lies at the very heart of any effective water pollution control program. The single line of thought which recurs throughout the legislative history of the Federal Water Pollution Control Act is that there is small prospect of success for other water pollution control activities unless they are accompanied by strong enforcement measures.

While the institution of formal enforcement action is neither practical nor advocated in every known instance of pollution, it is considered necessary to accelerate and enlarge the Federal program if it is to be discharged in the practical and effective manner intended in the act. The requested increase of $709,000 will permit an orderly expansion at a pace in balance with present capabilities. These scientific and technical studies are necessary as a basis for reasonable and equitable remedial measures required by enforcement actions.

Since 1956, 20 actions have been undertaken. In only about half of these was there sufficient and adequate scientific and technical information available to support a schedule of remedial work. In five of these situations, major onsite investigatory projects were undertaken to secure the necessary data. Four of these are still in progress—the Detroit River, the Colorado River, Puget Sound, and Raritan Bay. In the other cases, lesser investigations were conducted and in one instance, the conference has not advanced to the stage where a determination can be made as to whether available data are adequate.

To date some 300 industries and a like number of municipalities have been involved directly or indirectly in Federal enforcement actions. These have concerned 28 States and the District of Columbia, about 4,000 miles of such major waters as the Missouri, Columbia, and Mississippi Rivers, Raritan Bay (New York and New Jersey), Puget Sound, and the Detroit River and Lake Erie within the State of Michigan. Remedial construction costing approximately $500 million has been agreed upon thus far. When agreements are reached, the cost of remedial works for the Detroit, Colorado, and Columbia Rivers, Raritan Bay, and Puget Sound are expected to be of this magnitude.

The first step in the Federal enforcement procedure provides a forum for State and interstate agencies to discuss problems of mutual concern, and to plan jointly for their solution with Federal assistance, if needed. The scientific and technical resources of the Federal Government can, and usually are, made available to the States in solving their water pollution problems, since State resources are often limited. Some problems could not be solved without this assistance which also includes basic research.

The program for control of water pollution from Federal installations will continue during 1964. There have been two significant developments during 1963: (1) completion of the detailed inventory of Federal installations begun 2 years ago; and (2) a request from the President to take the lead in correcting deficiencies in pollution control practices so that the Federal Government can set an example for others in the abatement of water pollution. The latter will be accomplished by concentrating at the local level in cooperative programs to encourage and assist Federal departments and agencies in the planning, construction, and operation of necessary waste treatment facilities.

RESEARCH

The increase of $124,000 requested for research will be used principally to develop programs and to prepare for the operation of three of the seven regional laboratory and research facilities authorized in the 1961 amendments, and for the two water-quality research laboratories authorized by the 1963 Appropriation Act. Completion of the five laboratories by mid-1965 is anticipated at Corvallis, Oreg.; Ada, Okla.; Athens, Ga.; Duluth, Minn.; and Kingston, R.I.

To an increasing extent the laboratory studies currently underway will be supplemented by field experiments. Where such field research projects are related to regional problems, they will be utilized as initial steps in program development for the regional laboratories. Research goals for the laboratories will be established in cooperation with private, academic, industrial, and public agencies.

The increased emphasis given in 1963 to the research specifications contained in the 1961 amendments will be continued in 1964. These amendments direct the Secretary to develop and demonstrate under varying conditions, including basic and applied research, studies and experiments on—

(1) Methods and procedures for evaluating the effects on water quality and water uses of augmented stream flow to control water pollution not susceptible to other means of abatement;

(2) Improved methods and procedures to identify and measure the effects of pollutants on water uses, including those pollutants created by new technological developments; and

(3) Practicable means of treating municipal sewage and other waterborne wastes to remove the maximum possible amounts of physical, chemical, and biological pollutants in order to restore and maintain the maximum amount of the Nation's water at a quality suitable for repeated reuse.

Each of these specifications is directed to a national problem of major magnitude. In particular, the development of economic and highly effective methods for separation of dissolved pollutants in waste water is perhaps the single most important research goal in water pollution control. The availability of such methods is the key to water reuse. The nationwide interest in this problem is reflected in the prominence given the Symposium on Waste Water Renovation at the 1963 annual meeting of the American Chemical Society.

Laboratory research in 1964 will require increasing field experimentation, such as—

(1) Pollutants in drainage from various types of urban, farm, and forest lands will be studied in relation to their control by stream flow regulation. Since augmentation of flow requires impoundment of streams, field studies will include the nature of water quality changes resulting from converting free-flowing streams to stored water.

(2) Improved methods for identifying and evaluating pollutants will be tested at sites where pollution exists.

(3) Methods of advanced waste treatment showing promise in the laboratory will be tested at different locations. Plans are now being made for field testing the foaming technique and the adsorption process using regenerable adsorbents.

While the preliminary purpose of field studies is to gain knowledge or improve methodology, their conduct in most cases will illuminate and help solve specific problems. Full advantage of these studies will be taken in the early development of regional laboratory research programs.

An expanded research program on protection of aquatic life will be developed in 1964. In its initial phases this program will emphasize: (1) the improvement of methods of evaluation of pollutants, and (2) the establishment of criteria to guide control actions.

TECHNICAL SERVICES

The budget request for technical services of $1,665,000 will be used to continue three important activities: (1) technical assistance to local, State, and Federal agencies on request; (2) special field studies on pollution problems of regional or national significance; and (3) the technical services required in connection with administration of grant-in-aid programs. The major portion of the increase of $87,000 will be used in the special field studies now in progress.

Each year the Public Health Service responds to a large number of requests for expert assistance on many kinds of problems. State and local agencies often do not have the resources to deal with special problems and must rely on the Service for assistance. The special skills and resources of the Service are frequently utilized by other Federal agencies.

Very important technical assistance is provided through special field projects. These projects seek to solve major pollution problems of regional and national importance. These problems are too large to be effectively dealt with by the States alone and are being cooperatively studied with Federal resources. Two kinds of special field studies are underway and proposed for continuation in the 1964 budget: (1) recreation and water quality, and (2) contamination of water supplies and pesticides.

The three recreation studies underway in Jackson, Miss.; Indianapolis, Ind.; and San Diego, Calif., have a twofold purpose. At Jackson and Indianapolis, two reservoirs with distinctly different physical characteristics under influence of different climatic factors are being evaluated for the effect on water quality of intensive recreational use. At San Diego, the entire flow of effluent from the Santee, Calif., sewage treatment plant is being reclaimed for recreational purposes. A landscaped lake with picnic and boating facilities has been constructed. The studies are preceding actual recreational use to determine if virus and other health threats have been eliminated so that swimming and other water contact sports can be permitted with safety.

The pesticide project, begun in 1961, has revealed that trace quantities of insecticides and herbicides have found their way into a large proportion of the surface and underground waters of the Nation, even during the relatively short time they have been in use. Analytical methods have now been perfected for many of these compounds, and surface water examined at selected locations in six States. In 1964 the project will seek to ascertain the effects of pesticides on human health, fisheries, and livestock and to determine whether there is a critical level of pesticide absorption. Streams and lakes and underground aquifers will be examined. The pesticide project will become a part of the Athens, Ga., regional laboratory program as soon as it is practical to include it. This special study is of a factfinding nature and it may clarify some of the controversial issues discussed in Rachael Carson's recent book, "Silent Spring."

BASIC DATA ACTIVITIES

The increase of $98,000 requested for the Basic Data Branch will be used to continue the operation of the 125 national water quality network stations now established toward the ultimate goal of 300 stations, and to increase the effectiveness of the supporting water quality laboratory. Closer cooperation will be encouraged on the part of the local agencies assisting the network in collecting samples, making analyses, and operating and maintaining the stations. Further effort in the development of reliable methods of measuring pesticides in waters will be continued to permit the gathering of specific data in this new problem area.

There will be continued development of automatic sampling and water quality detection instrumentation for making automatic determinations of temperature, pH, dissolved oxygen, turbidity, and similar measurements. This is a very important activity in the collection of reliable water quality data. The successful development of automatic instruments will mean that data can be collected continuously in contrast to the infrequent manual sampling that is now used. Data will be more reliable since all instruments will be standardized. Time-consuming and costly hand sampling and analysis will be eliminated. The automatic water quality stations can be operated and maintained by a few persons in each of the new regional laboratories. The present stations require the part-time services of several hundred persons.

Work will be continued on the technical problems of establishing a national data retrieval system, whereby all reliable data from qualified laboratories all over the country can be stored centrally and reproduced quickly for those needing it. This will become increasingly necessary as actual management of water quality in river basins becomes a reality.

SCOPE OF POLLUTION PROBLEM

Mr. McCallum. Last year, in reporting on water supply and water pollution control, the House Appropriations Committee characterized water pollution as the "No. 1 natural resources problem confronting this Nation."

This recognition is increasing, not only among the responsible Government agencies but among our citizens as well. This is being demonstrated by the growing number of professional, civic, conservation, and other organizations that have repeatedly come before the Congress to support effective water pollution control. These groups recognize that only through maintaining water quality can we insure the continued national health, welfare, and economic growth.

We as a nation, are going to be using more and more water. At the same time we are going to be producing more and more pollution. In this situation we must learn to use water wisely and to maintain its quality for all desired uses.

Water pollution control is an intrinsic part of what President Kennedy has termed our national water goals of having "sufficient water, sufficiently clean, at the right place and at the right time." These goals can only be achieved if we maintain a high water quality in the Nation's lakes and streams through effective and timely pollution control.

The Federal Water Pollution Control Act, as now amended, provides a broad base for dealing with both the water resources development and health aspects of water pollution prevention and control. The act requires the Secretary to carry out major programs of water quality management and authorizes other important activities that supplement and support the programs of State, interstate, and local agencies, as well as the directed Federal programs.

INCREASES REQUESTED FOR 1964

This 1964 budget request is $29,980,000, an increase of $5,329,000 over the 1963 budget. The programs which this amount will support are designed to continue implementation of the requirements of the act, and to be responsive to recommendations made by the many advisory, regulatory, conservation, civic, and other groups supporting water pollution control.

Forty-one percent of the increase, or $2,178,000, will be used to support growth of research and training programs in universities and other qualified institutions. Most of this amount ($1,903,000) is for research and training grants, programs that are growing rapidly in response to the urgent need to accelerate research and the training of much-needed scientific and engineering manpower. The requests for fellowships and demonstration grants will also contribute toward meeting these needs.

Thirty-seven percent of the increase, or $1,972,000, is requested for the development of comprehensive programs for the control of water pollution in river basins. These programs are carried out in cooperation with State and interstate agencies, municipalities, and industry. This amount will provide for expansion of four continuing major projects and the initiation of four new ones. It will also support expansion of the important basic planning program and streamflow regulation activities for water quality control.

Thirteen percent of the increase, $709,000, is requested to continue the orderly growth of the Federal enforcement program and assistance to State regulatory agencies. Enforcement is an integral part of any effective water pollution control program. The Federal program is proving effective in achieving needed remedial programs, in stimulating States to proceed under their regulatory powers, and in generating public awareness of pollution problems.

The remainder of the requested increase, $470,000, will be used in direct research, collection and dissemination of basic data, technical assistance to others and for administrative services in connection with construction grants and research and training grants.

WATER POLLUTION CONTROL LABORATORIES

An important responsibility of the water pollution control program in 1964 will be the development of programs and preparation for the operation of the five new laboratories which are expected to be completed by mid-1965. Three of these are of the seven field laboratory research facilities directed to be established by the 1961 amendments to the Water Pollution Control Act. Two are the water quality standards laboratories authorized by the Appropriations Act of 1963.

The Congress and the public have shown a great deal of interest in these new facilities. For the first time, Federal laboratory and technical resources in water pollution control will be available in all regions of the country. To utilize them effectively will involve thoughtful planning and training of personnel in the coming year.

Mr. Chairman, I shall be glad to answer any questions you and the committee may have.

SUMMARY OF BUDGET FOR 1964

Mr. FOGARTY. The appropriation for 1963 is $24,707,000 and the request for 1964 is $29,980,000; this is an increase of $5,273,000 and 244 positions. You are absorbing all pay costs; is that right?

Mr. McCALLUM. That is right.

USE OF ADDITIONAL 1963 FUNDS

Mr. FOGARTY. Last year this committee and the House added $1 million to the bill. How are these funds being used?

Mr. McCALLUM. We began one new comprehensive program in the upper Ohio River and intensified four others.

Mr. FOGARTY. Upper Ohio River. Where would that be?

Mr. McCALLUM. That is above the Kanawha River.

Mr. FOGARTY. Where is that?

Mr. McCALLUM. In West Virginia. We have established a field office in Wheeling, W. Va., to carry on that work.

Mr. FOGARTY. How much has gone into this Wheeling project?

Mr. McCALLUM. $100,000.

Mr. FOGARTY. What are the additional areas? You mentioned four.

Mr. McCALLUM. We increased our work program on four other comprehensive programs.

Mr. FOGARTY. What are the four?

Mr. McCALLUM. I would like to make a correction, it was three: Columbia, Delaware, and Chesapeake Bay-Susquehanna Basins.

Enforcement Activities at Puget Sound and Detroit River

And the other part of the increase was put into enforcement in response to two requests; one in the State of Washington in the Puget Sound area requested by the Governor; and one on the Detroit River, which was requested by the Governor of Michigan. The remainder of the increases, a half million dollars, was placed in research, specifically the three areas of research that were stipulated in the 1961 amendments: better methods of waste treatment, detection and analysis of new types of contaminants, and the value of water for dilution purposes in Federal impoundments.

Mr. FOGARTY. Will you supply for the record the requests of the Governor of Washington for the Puget Sound area and the Governor of Michigan for the Detroit area? Also, how it started, what communications took place, what has been done, and what you are now doing in these two areas?

(The material follows:)

PUGET SOUND

STATE OF WASHINGTON,
EXECUTIVE DEPARTMENT,
Olympia, November 22, 1961.

Hon. ABRAHAM RIBICOFF,
Secretary of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. RIBICOFF: In accordance with section 8 of the Federal Water Pollution Control Act of 1961, I hereby request on behalf of the State of Washington a conference with your Department concerning the abatement of water pollution control problems with which we are presented in the State. Mr. John Riley, assistant attorney general, will be in Washington, D.C., in the next few days in the event such a conference can be arranged.

We are at this time engaged in administrative proceedings concerning waste disposal permits and conditions which should attach thereto in the case of 11 different pulpmill and papermill installations in the State of Washington. The waste discharges by the affected installations affect only the citizens of the State of Washington.

My purpose in requesting this conference is to determine whether Federal assistance in meeting the problems of research and investigation can be obtained.

Please advise.

Sincerely yours,

ALBERT D. ROSELLINI, *Governor.*

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, D.C., December 11, 1961.

Hon. ALBERT D. ROSELLINI,
Governor of Washington,
Olympia, Wash.

DEAR GOVERNOR ROSELLINI: This is in response to your letter of November 22, 1961, requesting a conference under section 8 of the Federal Water Pollution Control Act.

We shall be most happy to comply with your request. Our technical staff will be in touch with State representatives to determine with particularity, the scope of the problems, including research and investigations required.

On the basis of available information, we believe we can provide investigation assistance sufficient to meet the needs of the problem. If after the meeting of our technical staff further research is indicated, you can be assured that such research will receive our sympathetic consideration.

I am sure that a cooperative State-Federal approach will be of material value in meeting the water pollution control problems faced by the State of Washington.

Sincerely,

ABRAHAM RIBICOFF, *Secretary.*

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE,
Washington, December 19, 1961.

Mr. EARL COE,
Chairman, Pollution Control Commission,
Department of Conservation and Development,
Olympia, Wash.

DEAR MR. COE: On the basis of a written request from Governor Rosellini of the State of Washington, dated November 22, 1961, in accordance with section 8 of the Federal Water Pollution Control Act, a conference in the matter of the pollution of the water of Puget Sound, the Straits of Juan De Fuca, and all navigable estuarine waters, and navigable streams, and tributaries thereto within the State of Washington; and the Upper Columbia River and all navigable tributaries thereto within the State of Washington, is called for Tuesday, January 16, 1962, at 10 a.m., in the conference room of the General Administration Building at Olympia, Wash. Mr. Murray Stein of this Department has been designated as chairman of the conference.

Participation in the conference will be limited to representatives of the Department of Health, Education, and Welfare, and such persons as are designated by the Water Pollution Control Commission of the State of Washington.

As specified in the Federal act, we will prepare a summary of conference discussions and send it to the Water Pollution Control Commission of the State of Washington.

Sincerely,

ABRAHAM RIBICOFF, *Secretary.*

SUMMARY OF CONFERENCE (FIRST SESSION) POLLUTION OF NAVIGABLE WATERS PUGET SOUND AND UPPER COLUMBIA RIVER (WASHINGTON) JANUARY 16 AND 17, 1962

Puget Sound is a body of water tributary, through the Strait of Juan De Fuca, to the Pacific Ocean, draining approximately 13,000 square miles of land. The water area of the basin is approximately 2,000 square miles. Many rivers, streams, canals, and lakes drain from east, south, and west into Puget Sound and into the Strait of Juan De Fuca.

The Columbia River flows southerly from British Columbia across the State of Washington to form the boundary between Oregon and Washington for more than 300 miles before reaching the Pacific Ocean. The principal tributaries in the upper watershed feeding the Columbia River are the Spokane, Snake, Yakima, Okanogan, and Pend-Oreille Rivers. The Columbia River drainage area includes 220,000 square miles in the United States and 39,000 square miles in British Columbia.

On the basis of a written request to the Secretary of Health, Education, and Welfare from Albert D. Rosellini, Governor of Washington, dated November 22, 1961, the Secretary of Health, Education, and Welfare, on December 19, 1961, called a conference under the provisions of section 8 of the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.) in the matter of pollution of the navigable waters of Puget Sound, the Strait of Juan De Fuca, and all estuarine waters and waters tributary thereto in the State of Washington, and the Upper Columbia River and all waters tributary thereto within the State of Washington.

The first session of the conference was held on January 16 and 17, 1962, in the General Administration Building in Olympia, Wash.

The following conferees representing the Washington Pollution Control Commission and the U.S. Department of Health, Education, and Welfare, participated in the conference:

W. W. Bergerson, director, Washington Pollution Control Commission, Olympia, Wash.
Leonard Dworsky, U.S. Department of Health, Education, and Welfare, Portland, Oreg.
Murray Stein, chairman, U.S. Department of Health, Education, and Welfare, Washington, D.C.

Also participating in the conference were the following:

Albert D. Rosellini, Governor, State of Washington, Olympia, Wash.
James M. Quigley, Assistant Secretary, U.S. Department of Health, Education, and Welfare, Washington, D.C.
Earl Coe, chairman, Washington Pollution Control Commission, Olympia, Wash.
Vinton W. Bacon, Northwest Pulp & Paper Association, Tacoma, Wash.
R. H. Bailey, Pioneer Oyster Co., Seattle, Wash.
Richard Beebe, Washington Department of Commerce and Economic Development, Olympia, Wash.
James P. Behlke, Washington Pollution Control Commission, Olympia, Wash.
John A. Biggs, Washington Department of Game, Olympia, Wash.
Gerald Burke, Municipal Employees, Local 113, Everett, Wash.
John H. Eyer, International Brotherhood of Pulp, Sulphite, & Paper Mill Workers, Everett, Wash.

William A. Gissberg, State Senator, Everett, Wash.
Edward J. Gruble, Hilton Seafoods Co., Seattle, Wash.
Ray E. Holmes, U.S. Corps of Engineers, Seattle, Wash.
James P. Hunter, Simpson-Lee Paper Co. & Weyerhaeuser Timber Co., Everett, Wash.
Emil Jensen, Washington Department of Health, Seattle, Wash.
C. Montgomery Johnson, Weyerhaeuser Timber Co., Tacoma, Wash.
Cedric E. Lindsay, Washington Department of Fisheries, Brinnon, Wash.
Oliver Malm, Weyerhaeuser Timber Co., Tacoma, Wash.
John McEwen, Weyerhaeuser Timber Co., Everett, Wash.
David C. McMillin, Olympia Oyster Growers Association, Shelton, Wash.
John C. Migdula, Washington State Sportsmen's Council, Tacoma, Wash.
Harold E. Miller, Seattle Metropolitan District, Seattle, Wash.
Milo Moore, Pacific Coast Oyster Growers' Association, Seattle, Wash.
Clifford Muehlenbach, Washington State Parks and Recreation Commission, Olympia, Wash.
Alfred G. Neale, Washington Pollution Control Commission, Olympia, Wash.
Richard T. Pressey, U.S. Fish and Wildlife Service, Portland, Oreg.
John W. Riley, Washington State Attorney General's Office, Olympia, Wash.
Harold Rolfsen, Washington State Parks and Recreation Commission, Seattle, Wash.
R. N. Steele, Rocky Point Oyster Co., Blanchard, Wash.
Nat Waldridge, Olympia Oyster Growers' Association, Shelton, Wash.
Thomas O. Wimmer, Seattle, Wash.

The chairman of the conference pointed out that—

1. Under the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.), pollution of navigable waters which endangers the health or welfare of any persons is subject to abatement under procedures described in section 8 of the Federal Act.
2. The first step of this procedure is the calling of a conference.
3. The purpose of the conference is to bring representatives of the State and the U.S. Department of Health, Education, and Welfare together to review the existing situation and progress made; to lay a basis for future action by all parties concerned; and, to give the State and localities an opportunity to take any remedial action under State and local law which may be indicated.
4. The conferees agreed to limit the discussions in the first session of the conference to matters relating to Puget Sound, and the Strait of Juan De Fuca, and their navigable tributaries.

In the light of conference discussions, the conferees unanimously agreed to the following conclusions and recommendations:

1. Puget Sound, its tributaries, and the Strait of Juan De Fuca, its tributaries are navigable waters within the meaning of section 8 of the Federal Water Pollution Control Act.

2. Pollution of navigable waters subject to abatement under the Federal Water Pollution Control Act is occurring in Puget Sound and its tributaries, and the Strait of Juan De Fuca and its tributaries. The discharges causing and contributing to this pollution come from various industrial and municipal sources in the Puget Sound and the Strait of Juan De Fuca areas, notably the pulp and paper industry.

3. This pollution causes deleterious conditions so as to interfere with legitimate water uses including fisheries resources, commercial and sport fishing, and recreation.

4. Measures employed by the sources of pollution mentioned in the conference have not been adequate to control pollution of the waters of Puget Sound and the Strait of Juan De Fuca areas.

5. Cognizance is taken of the program of the Washington Pollution Control Commission for development of adequate pollution control measures on a progressive basis and the excellent progress being made by many industries under this program. Delays encountered in abating the pollution have been due to the fact that some of the sources of pollution have failed to take remedial action consistent with the requirements of the Washington Pollution Control Commission.

6. The permit system of the State of Washington is a reasonable method of handling industrial pollution control. Temporary permits providing reasonable recommendations for abatement of pollution have been issued to some industries among which are seven pulp and paper mills in the Puget Sound and the Strait of Juan De Fuca areas. (All temporary permits issued to industries in the area are listed in app. A.) The conditions in the temporary permits issued to the following listed companies provide reasonable requirements for abatement of pollution:

Permittee:
  Weyerhaeuser Timber Co., Pulp Division, Everett, Wash., T–406.
  Scott Paper Co., Everett, Wash., T–403 and T–405.
  Simpson-Lee Paper Co., Everett, Wash., T–408 and T–409.
  Fibreboard Products, Inc., Port Angeles, Wash., T–400.
  Rayonier Inc., Port Angeles, Wash., T–402.
  Scott Paper Co., Anacortes, Wash., T–412.
  Puget Sound Pulp & Timber Co., Bellingham, Wash., T–401.

7. The above-listed industrial sources of pollution shall be required to take action to control their waste discharges at least to the extent specified in the temporary permits issued to them by the Washington Pollution Control Commission.

These industries shall have engineering plans and specifications for pollution abatement measures completed and approved by the Washington Pollution Control Commission on or before January 1, 1963. If alternate plans are to be proposed by these industries, they shall be submitted to the Washington Pollution Control Commission by July 1, 1962. Such pollution abatement measures shall be constructed and placed in operation within a reasonable time as determined by the Washington Pollution Control Commission when the engineering plans and specifications are approved.

8. The Washington Pollution Control Commission will proceed forthwith to develop a program for controlling discharges from the remaining municipal, industrial, and other sources in the Puget Sound and the Strait of Juan De Fuca areas in order to prevent pollution of such waters. The Washington Pollution Control Commission will supervise all programs and will establish dates for completion and operation of required waste control facilities.

9. Representative of both the State of Washington and the U.S. Department of Health, Education, and Welfare will develop a joint program to carry out such investigations and studies as are required. The Department's staff at Portland, Oreg., will be augmented for this purpose and that staff will proceed forthwith to make necessary evaluations and studies.

10. The U.S. Department of Health, Education, and Welfare will prepare progress reports on the above programs at intervals not to exceed 3 months or more frequently if required to record developments or to report on meetings held. The Washington Pollution Control Commission will make information in these reports available to all interested parties.

11. Pollution in the upper Columbia River will be considered at a session of the conference to be called by the chairman in the near future. Other sessions of the conference will be held at the call of the chairman if required.

Pacific Coast Paper Mills of Washington [1]	Bellingham.
Puget Sound Pulp & Timber Co. (pulpmill)[1]	Do.
Puget Sound Pulp & Timber Co. (papermill) [1]	Do.
Lynden Berry Growers Inc. (pea plant)[1]	Lynden.
Western Condensing Co.[1]	Do.
Whatcom County Dairymen's Association [1]	Do.
Coos Bay Pulp Corp [1]	Anacortes.
Scott Paper Co. (pulpmill)[1]	Everett.
Scott Paper Co. (papermill)[1]	Do.
Weyerhaeuser Timber Co. (sulfite mill)[1]	Do.
Weyerhaeuser Timber Co. (kraft mill)[2]	Do.
Art's Poultry [1]	Do.
Simpson-Lee Paper Co. (pulpmill, papermill)[1]	Do.
Simpson-Lee Paper Co. (deinking plant)[1]	Do.
U.S. Plywood Corp [1]	Seattle.
Allied Poultry Co.[1]	Do.
Rainier Poultry Co.[1]	Do.
Seattle Poultry, Inc.[1]	Do.
City of Seattle Asphalt Plant [1]	Do.
Mutual Materials Co.[1]	Do.
Cargill, Inc.[1]	Do.
Northwest Orient Airlines, Inc.[1]	Do.
Pan American World Airways, inc.[1]	Do.
United Air Lines, Inc.[1]	Do.
Western Air Lines, Inc.[1]	Do.
Fruehauf Trailer Co.[1]	Do.
Kenworth Motor Truck Co.[1]	Do.
Monsanto Chemical Co.[1]	Do.
Northwest Cooperage Co.[1]	Do.
Northwest Asphalt Co.[1]	Do.
Lone Star Cement Co.[1]	Do.
Puyallup & Sumner Sales Corp.[1]	Puyallup.
Pacific Meats [1]	Do.
Container Corp. of America [2]	Tacoma.
Fibreboard Products, Inc.[2]	Sumner.
St. Regis Paper Co. (papermill)[2]	Tacoma.
Standard Brands Inc.[1]	Sumner.
Bay Smelting Co.[1]	Tacoma.
Archer-Daniels-Midland Co.[1]	Do.
Great Northern Railway Co.[1]	Do.
Northern Pacific Railway Co.[1]	Do.
Fibreboard Paper Products Corp. (groundwood, sulfite, and paper)[1].	Port Angeles.
Rayonier, Inc.[1]	Do.

[1] Temporary permit.
[2] Expired permit.

PUGET SOUND ENFORCEMENT ACTION

In the Puget Sound enforcement area in the State of Washington the Department of Health, Education, and Welfare is conducting a survey with a staff which includes varying degrees of scientific skills and training.

The studies are particularly directed toward evaluating the effects of discharges from seven pulp and paper mills on the waters of Puget Sound. The studies consist of oceanographic, biological, economic, and chemical analysis of pulp and paper mill waste. The studies will be used as a basis for recommendations for remedial measures to effect abatement of pollution. These studies are being carried on in cooperation with the Washington Pollution Control Commission.

State of Michigan,
Office of the Governor,
Lansing, December 6, 1961.

Hon. Abraham A. Ribicoff,
Secretary of Health, Education, and Welfare,
Washington, D.C.

Dear Mr. Secretary: In accordance with section 8 of Public Law 660, as amended (Public Law 87–88), I request that you, as Secretary of Health, Education, and Welfare, assist the State of Michigan to identify and recommend methods for correcting the sources of pollution going into the Detroit River and subsequently into Lake Erie.

Michigan's southeastern complex reflects the same type of problem that is reflected in the many other States that have densely populated, rapidly changing metropolitan areas. The Michigan Water Resources Commission, our water pollution control agency, has compiled an exemplary record of pollution abatement throughout the State. However, as is common in highly concentrated industrial areas, critical pollution problems make demands that are above and beyond the normal pollution control activities. It is to this particular problem that we address ourselves and ask for your assistance in order to correct any danger to health and welfare that may exist.

It also appears that Michigan's particular pollution problem is not exclusively that of our own making. It is alleged that both Sarnia and Windsor, Canada, discharge untreated sewage into the Detroit River, thus adding to Michigan's total pollution problem. If this, indeed, is a contributing factor, this added problem would have international implications that would better lend themselves to Federal assistance to bring about necessary pollution abatement.

Should you find yourself in a position to grant this request, I assure you the full cooperation of Michigan agencies in this mutual undertaking.

With warm personal regards.

Sincerely yours,

John B. Swainson, *Governor.*

Department of Health, Education, and Welfare,
Washington, December 10, 1961.

Hon. John B. Swainson,
Governor,
Lansing, Mich.

Dear Governor Swainson: This is in response to your letter of December 6, 1961, requesting action under section 8 of the Federal Water Pollution Control Act to assist the State of Michigan in correcting sources of pollution coming into the Detroit River and subsequently into Lake Erie.

We shall be most happy to comply with your request. Our technical staff will be in touch with State representatives to determine with particularity the scope of the problems and investigations required.

I am sure that a cooperative State-Federal approach will be of material value in meeting these water pollution control problems of the State of Michigan.

Sincerely,

Abraham Ribicoff, *Secretary.*

Department of Health, Education, and Welfare,
Washington, January 19, 1962.

Mr. Milton P. Adams,
Executive Secretary, Water Resources Commission,
Lansing, Mich.

Dear Mr. Adams: Governor Swainson of the State of Michigan, on December 6, 1961, requested in writing that a conference be called in the matter of pollution of the navigable waters of the Detroit River and its tributaries within the State of Michigan, and Lake Erie and its tributaries within the State of Michigan.

In accordance with this request and the provisions of section 8 of the Federal Water Pollution Control Act, a conference on this matter is called for Tuesday, March 27, 1962, at 10 a.m. e.s.t., in the banquet hall, Veterans' Memorial Building, 151 West Jefferson Avenue, Detroit, Mich. Mr. Murray Stein of this Department has been designated Chairman of the Conference.

Participation in the Conference will be limited to representatives of the Department of Health, Education, and Welfare, and such persons as are designated by the Water Resources Commission of the State of Michigan.

As specified in the Federal act, we will prepare a summary of conference discussions and send it to the water resources commission of the State of Michigan.

Sincerely,

ABRAHAM RIBICOFF, *Secretary.*

SUMMARY OF CONFERENCE, FIRST SESSION, POLLUTION OF NAVIGABLE WATERS, DETROIT RIVER AND LAKE ERIE, MICH., MARCH 27 AND 28, 1962

The waters considered at this Conference are those within the State of Michigan which extend from the mouth of the south channel of the St. Clair River around the western side of Lake St. Clair, down the Detroit River and along the extreme western end of Lake Erie to the Michigan-Ohio State line, and all tributary waters within the area described. Lake St. Clair and the Detroit River constitute the connecting channel between the upper Great Lakes and Lake Erie. Four Michigan counties, St. Clair, Macomb, Wayne, and Monroe, front on the waters involved. Detroit, the Nation's fifth largest city, and the adjacent complex discharge their wastes, industrial and municipal, to the waters involved.

On the basis of a written request to the Secretary of Health, Education, and Welfare from the Honorable John B. Swainson, Governor of Michigan, dated December 6, 1961, the Secretary of Health, Education, and Welfare on January 19, 1962, called a conference under the provisions of section 8 of the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.) in the matter of pollution of the navigable waters of the Detroit River and its tributaries within the State of Michigan, and Lake Erie and its tributaries within the State of Michigan. The first session of the Conference was held on March 27 and 28, 1962, in the Veterans' Memorial Building, Detroit, Mich.

The following conferees representing the Michigan Water Resources Commission and the U.S. Department of Health, Education, and Welfare participated in the Conference:

Albert E. Heustis, M.D., Michigan Water Resources Commission, Lansing, Mich.
Gerald E. Eddy, Michigan Water Resources Commission, Lansing, Mich.
George F. Liddle, Michigan Water Resources Commission, Muskegon, Mich.
James S. Gilmore, Jr., Michigan Water Resources Commission, Kalamazoo, Mich.
H. W. Poston, U.S. Department of Health, Education, and Welfare, Chicago, Ill.
Murray Stein, Chairman, U.S. Department of Health, Education, and Welfare, Washington, D.C.

Also participating in the Conference were the following:

Robert E. Teifer, mayor, city of Trenton, Trenton, Mich.
Milton P. Adams, Michigan Water Resources Commission, Lansing, Mich.
C. D. Barrett, M.D., Monroe County Health Department, Monroe, Mich.
George R. Bingham, Wayne County Department of Public Works, Detroit, Mich.
Laurence M. Braun, Anti-Pollution Committee, Wayne County Sportsmens Club, Detroit, Mich.
David Calhoune, Wayne County Supervisors Inter-County Committee, Detroit, Mich.
W. F. Carbine, U.S. Bureau of Commercial Fisheries, Ann Arbor, Mich.
John Chascsa, Lake Erie Cleanup Committee, Estral Beach, Newport, Mich.
Harold F. Clark, U.S. Department of Health, Education, and Welfare, Cincinnati, Ohio.
Frank E. Clarke, U.S. Geological Survey, Washington, D.C.
Richard Daughtery, Wayne County Drain Commission, Detroit, Mich.
James M. Davey, Wayne County Road Commission, Detroit, Mich.
Donald Eddy, U.S. Office of Emergency Planning, Battle Creek, Mich.
Arthur C. Elmer, Michigan Department of Conservation and Parks, Lansing, Mich.
Comdr. Frank M. Fisher, Jr., U.S. Coast Guard, Cleveland, Ohio.
George Hazey, Wyandotte Water Division, Wyandotte, Mich.
Darwin R. Kirk, Van Buren Township, Wayne County.
F. W. Kittrell, U.S. Department of Health, Education, and Welfare, Cincinnati, Ohio.
Edward Mallonen, Huron-Clinton Metropolitan Authority, Detroit, Mich.
Carl R. Miller, U.S. Department of Agriculture, University of Miss.
Herbert J. Miller, Michigan Department of Conservation and Parks, Lansing, Mich.

Gerald Murphy, The Detroit Edison Co., Detroit, Mich.
Warren H. Nord, U.S. Bureau of Sport Fisheries and Wildlife, Minneapolis, Minn.
Loring F. Oeming, Michigan Water Resources Commission, Lansing Mich.
Nicholas V. Olds, assistant attorney general, State of Michigan, Lansing, Mich.
Clyde L. Palmer, Detroit Department of Public Works, Detroit Mich.
Col. R. C. Pfeil, U.S. Corps of Engineers, Detroit, Mich.
William J. Phelan, Monroe County Rod & Gun Club, Monroe, Mich.
Donald M. Pierce, Michigan Department of Health, Lansing, Mich.
Joseph W. Price, Washtenaw County Health Department, Ann Arbor, Mich.
John M. Rademacher, U.S. Department of Health, Education, and Welfare, Chicago, Ill.
Paul M. Reid, Detroit Metropolitan Area Regional Planning Commission, Detroit, Mich.
Gerald Remus, Detroit Water Department, Detroit, Mich.
Glenn C. Richards, Detroit Department of Public Works, Detroit, Mich.
D. W. Ringler, Oakland County Department of Public Works, Pontiac, Mich.
Robert Ritzenheim, U.S. Department of Justice, Detroit, Mich.
John E. Vogt, Michigan Department of Health, Lansing, Mich.
Keith Wilson, Michigan Waterways Commission, Detroit, Mich.

The chairman of the conference pointed out that—

(1) Under the Federal Water Pollution Control Act (33 U.S.C. 466 et seq.) pollution of navigable waters which endangers the health or welfare of any persons is subject to abatement under procedures prescribed by section 8 of the Federal act.

(2) The first step of this procedure is the calling of a conference.

(3) The purpose of the conference is to bring representatives of the State and the U.S. Department of Health, Education, and Welfare together to review the existing situation and progress made; to lay a basis for future action by all parties concerned; and, to give the State and localities an opportunity to take any remedial action under State and local law which may be indicated.

In the light of conference discussions, the conferees unanimously agreed to the following conclusions and recommendations:

(1) Lake St. Clair, the Detroit River, and Lake Erie, within the State of Michigan, and their tributaries within the State of Michigan, are navigable waters within the meaning of section 8 of the Federal Water Pollution Control Act.

(2) Pollution of navigable waters subject to abatement under the Federal Water Pollution Control Act is occurring in the Michigan waters of Lake St. Clair, the Detroit River, and Lake Erie, and their tributaries. The discharges causing and contributing to the pollution come from various industrial and municipal sources.

(3) This pollution causes deleterious conditions so as to interfere with legitimate water uses, including municipal and industrial water supplies, fisheries resources, commercial and sport fishing, swimming, water skiing, pleasure boating, and other forms of recreation.

(4) It is too early, on the basis of the record of the conference, to make an adequate judgment of the adequacy of the measures taken toward abatement of the pollution. The conference discussions demonstrate that there are many gaps in our knowledge of sources of pollution and their effects.

(5) Cognizance is taken of the program of the Michigan Water Resources Commission for development of adequate pollution control measures on a progressive basis and the excellent progress being made by many municipalities and industries under this program. Delays encountered in abating the pollution may well be caused by the existence of a municipal and industrial complex concentrated in an area with a limited water resource. The conferees are also aware of the vast problems that Detroit faces as a result of the storm-water outflow from a system of combined sewers. The problem thus becomes one of approaching the entire area on a coordinated basis and putting in adequate facilities based on an overall plan.

6. Cognizance is also taken of the six-county study as a useful approach to the solution of the pollution problem in the Detroit area.

(7) The Department of Health, Education, and Welfare, in order to close the gaps in the knowledge as to sources of pollution, nature of pollution, and the effects thereof, appropriate methods of abatement, and appropriate methods

to avoid delays in abatement, will initiate an investigation and study to gather data and information on the waters involved. This investigation and study will be carried on in close cooperation with the State agencies concerned, with the details of the investigation to be determined by the technical staffs of the Department of Health, Education, and Welfare, the Michigan Health Department, and the Michigan Water Resources Commission. The Department of Health, Education, and Welfare will establish a resident survey group to provide technical assistance for this investigation.

(8) The Department of Health, Education, and Welfare will prepare reports on the progress of this investigation at 6-month intervals which will be made available to the Michigan Water Resources Commission. The Michigan Water Resources Commission will make information contained in these reports available to all interested parties.

(9) The conference will be reconvened at the call of the chairman with the concurrence of the Michigan Water Resources Commission to consider the results obtained from the investigation and study, and to agree on action to be taken to abate pollution.

DETROIT ENFORCEMENT ACTION

In the Detroit enforcement area a staff has been assembled, using Federal facilities at the Grosse Ile Naval Air Station as a base to conduct the necessary studies.

At the present time studies are being made to determine all contributors of pollution to the Detroit River and the waters of Lake Erie within the State of Michigan. Samples are being analyzed for physical and chemical content.

The results of these studies will be used as a basis for recommending appropriate remedial measures to abate pollution in the area concerned. Close cooperation is maintained with the Great Lakes-Illinois River Basin project.

ANDROSCOGGIN RIVER POLLUTION

Mr. **Fogarty.** What about the problem in New Hampshire?

Mr. **McCallum.** The Androscoggin River? That is one of the two cases we have been engaged in during the past year. Secretary Quigley is here.

Mr. **Quigley.** I believe that in the Androscoggin situation we have been engaged in a struggle because the State of New Hampshire and the State of Maine and the interstate agencies have advanced the argument that the Federal Government does not have jurisdiction in this type of case. Whether they are going to persist in this position or not, we cannot say. We had two conferences or made two efforts to hold a conference. They walked out on one and attended the second as "nonparticipating participants." Most of their time at the second conference was spent arguing the legal jurisdiction question. That is where it stands at the moment.

Mr. **Fogarty.** Did the change in Governors have any effect on this problem?

Mr. **Quigley.** Yes and no. I do not want to say that it did.

Mr. **Fogarty.** Maybe I should not ask that question.

Mr. **Quigley.** The situation in New Hampshire is this: that while they elect the Governor for a 2-year term, their attorney general is appointed for a 5-year term, so that while you have a new Governor who may or may not have a different attitude from his predecessor, and I do not know clearly what the Governor's attitude is, the position that has been expressed at the conference as far as the viewpoint of the State of New Hampshire is concerned, reflects, I believe, the thinking and the attitude of the attorney general's office, rather than the Governor.

Mr. FOGARTY. There was a problem with the State legislature, was there not?

Mr. QUIGLEY. The basic problem here is that New Hampshire is one of those States where the legislature reserves to itself the matter of classification of streams. They do not delegate it to the Public Health Service. They do not delegate it to a State water pollution control agency. The job of classifying streams for pollution and abatement purposes is specifically reserved to the legislature. Because of this the argument that the attorney general has advanced is that the Federal Government's jurisdiction cannot attach.

CRITICISM OF ENFORCEMENT PROGRAM

Mr. FOGARTY. While we are on this problem of enforcement, is there anything else you want to say? As you know, the Public Health Service has been accused, by groups and individuals and Members of Congress, of not enforcing the act. Do you want to make a statement on that?

Mr. QUIGLEY. I would say that I have been exposed to that comment. I have been involved for the last year or year and a half in enforcement proceedings or the enforcement phase of this program in particular, and I know from the inside that putting together an enforcement case is not a simple, easy task. You just do not decide to do it today and have it done tomorrow. It takes weeks and months of collecting data and surveying before you are in a position to move.

Sometimes you decide on the basis of the data you have that you are not in a position to move.

Mr. FOGARTY. What is the basis of this criticism then?

ALLEGATION THAT PHS IS RELUCTANT TO PROSECUTE

Mr. QUIGLEY. The basis of the criticism, as I understand it, is that the Public Health Service is involved in the many important programs that has been testified to here today which involves working with the States and the water pollution program or the enforcement phase of the water pollution program is the only one where of necessity you have to "wave the big stick" occasionally, and the accusation has been made—I do not say it is valid—but the accusation has been made that Public Health Service people are reluctant to wave the stick at the water pollution cases because it not only disturbs their relations vis-a-vis this particular program but upsets good working relations on a variety of other Federal-State programs. This has been the charge.

Mr. FOGARTY. Have you seen any evidence of this?

Mr. QUIGLEY. Some evidence, yes. I think there is. I think that I understand human nature. If I were responsible for working with State offices and we have a long list of programs in which we are making real headway, and there is great cooperation, I can see why this State might very well say, "Why do you have to be such"—I cannot use the word on the record—"Why can't we get along on this program as we can on the others?" But the fact is that enforcement is an essential part of the water pollution control program, and occasionally you have to be the man with the big stick and the guy who says it is going to have to be done. I cannot blame the Public

Health Service people for facing up to this moment with reluctance or, perhaps, with something less than enthusiasm. As they can see in the State of New Hampshire tempers flare and people get mad and the whole atmosphere that is conducive to cooperation and working together in a lot of important programs gets disturbed.

Mr. Fogarty. Give me one example where there has been some evidence of this halfheartedness on the part of the Public Health Service to enforce the law.

Mr. Quigley. I do not know if I can give you one example. Nothing comes to me.

Mr. Fogarty. The Secretary testified earlier to the contrary.

Mr. Quigley. That there was evidence?

Mr. Fogarty. As far as he was concerned there was not any evidence.

GEORGIA CASE

Mr. Quigley. The only instance I can think of offhand where in my mind there was lack of enthusiasm or at least they were not ready to move with the speed that I would have preferred, involved a survey of a situation in one State. We have not brought the enforcement case as yet, but there was a bit of a tussle with our regional office as to whether or not we should begin to collect our basic data only after we were invited to do so.

Mr. Fogarty. What regional office?

Mr. Quigley. The Atlanta region. It was the State of Georgia, and it is a case we have not yet brought. I can understand the attitude of the Public Health Service people in Atlanta, that they have their working relationship with the State offices and if word gets out that some of the Public Health Service people in town or in the State are gathering evidence, which is the way it will be made to appear, this is kind of a disrupting influence.

RATIONALE FOR COMMENCING ENFORCEMENT ACTIONS

But I really think that if we are going to carry out our responsibility under the law, as far as enforcement is concerned, we have no choice but to get the necessary data that we need to make a decision as to whether an enforcement conference should or should not be called. If we do it only by leave of the State, I just do not think we are going to be able to move in this thing with the urgency and dispatch that I feel we have to move. I think basically what is involved here is the difference between a lawyer's attitude and a doctor's attitude. Doctors do not like to go to court; lawyers do. And I think there is just a natural tendency in which they are completely sincere—a natural tendency on the part of the medical men to not proceed on an adverse or a negative basis.

Mr. Fogarty. I am not a lawyer, as you well know, but some of the most successful lawyers I know in Rhode Island are those who never tried a case in court.

Mr. Quigley. I am well aware of that.

Mr. Fogarty. Our Attorney General had little or no courtroom experience when he was appointed to the highest legal position in the Executive Branch of our Government.

Mr. Quigley. That is true. But, Mr. Chairman, if we did not have a number of enforcement cases under active consideration when we appeared before the committees of Congress, we could be and should be subject to criticism. This is not to say, and I have made this point many times—this is not to say that enforcement approach in my judgment should be done on a shotgun basis, trying to bring enforcement proceedings all over the map.

I think by bringing a selected number of them in a variety of situations involving different types of pollution problems, different industries, different parts of the country, I think we can demonstrate that we are sincere in our efforts and that we do mean business. I think, frankly, if we do this and if it is spelled out so that everybody can know and understand, the inevitable result will be for the States to do more on their own, because the answer that State water pollution people can give to a Governor or a State legislature, is that if we do not move in this area the Department of Health, Education, and Welfare will. This is what I think is inevitably bound to happen if it is clearly demonstrated that we do mean business and that we are in the enforcement business, as well as in the grant business, as well as in the research business.

ENFORCEMENT AT REQUEST OF GOVERNORS

I think we have been getting this point of view across, at least I hope we have. I would like to make one other comment about the enforcement problem that I think this committee should be aware of and that is that with the element in the bill we now have with reference—with the reference that Mr. McCallum made to Governor Rosselini and former Governor Swainson inviting us to an enforcement action, in a sense we are not masters of our own situation. In other words, we do not know when the morning mail comes in whether we are going to get a request from a Governor or two Governors or no Governor.

At any given time, for budget purposes, we may have to be ready to drop what we are doing or drop what we plan to do and respond to a Governor's request because I think if we fail to do it we would be subject to a great deal of criticism, so that there is this unknown element in the picture and will always be there as the act is now written; and I think this is a good provision in the act.

We have no way of knowing as we testified here, whether some Governor is going to invite us into his State tomorrow, and, if he does, I think we have to be ready to move, even though from our point of view we probably would not have gotten around to that State for 2, 3, 4, or 5 years. So there is this element.

Mr. Fogarty. The Public Health Service has moved when they have had a request?

Mr. Quigley. Every time that we have been requested we have moved, including one I would point out in the Escambia—that is from Alabama into Florida. We were requested to come in there by the State of Florida and went in and held a conference and looked at the situation, came to the conclusion that we did not have jurisdiction in the sense that the pollution that was occurring was occurring in the State of Florida, rather than in the State of Alabama. But there, even though this was the ultimate conclusion we came to, when the request came in, we responded to it. In addition to being ready to take up such requests from Governors or from States on fairly short notice, I think we also have to plan our program, an orderly roster of enforcement cases, and proceed with them when we decide that we have the basic data that would be needed to bring the issue into focus and see the solution. This is what we are trying to do. This was not an invitation from anybody. As a matter of fact, invitations have run the other way. We have been invited to leave. This one is still hanging fire. It may end up in a long court wrangle. I do not know. I am still hopeful we can really sit down at a conference with the State of Maine and State of New Hampshire and work out an acceptable solution to the problem.

ENFORCEMENT PROCEDURES

Mr. Fogarty. That has happened many times, has it not, where an acceptable solution has been worked out in lieu of going to court?

Mr. Quigley. Every time. There has never been an instance in the history of the act since 1956 that the conferees—well, I would not say never—there were three instances where we had to get to a different stage. In almost every instance the conferees representing the States involved, representing the interstate agency, if there is a river compact involved and representing the Department have been invariably able to come to a unanimous agreement as to what the problem is, what steps were being taken for the record, and what additional steps should be taken over a period of years. So the conference technique, in my judgment, has been eminently successful in achieving the basic purpose of cleaning up the stream involved.

There are only three instances, I believe, where conferees could not come to an agreement and the hearing had to be held and in only one instance where, after the hearing was held, it was necessary to go to court. So the conference technique—I do not know who thought of it, I do not know where it came from—but it is, in my judgment, highly desirable, highly effective.

Mr. Fogarty. While we are on this enforcement program, do you want to say anything, Dr. Anderson?

HISTORY OF PUBLIC HEALTH SERVICE REGULATION

Dr. Anderson. First, as a doctor, I would like to say that I do not think doctors are unique in that they do not like to be in court. I think there are many people who do not like to be in court. They are not exclusively doctors. As far as public health is concerned, public health as a movement has depended philosophically on the police powers of the State. Public health workers are trained in this concept that one of the things of public health is regulation. These powers are used by health officers and health offices around the country in various activities, not only water pollution control enforcement. I do not think that enforcement, as an activity, is foreign to public health; it is almost one of the basic elements. This is true in regard to quarantine, true in regard to compulsory isolation of the individual, and true with regard to sanitation practices in communities.

So we are used to thinking in these terms. The feeling does exist, though, in some quarters that this is an activity that is foreign to the public health movement. To me, this just represents a lack of understanding of some of the basic principles that have underpinned the development of the public health movement down through the years here in this country.

So I do not understand these charges made about public health offices not wanting to get into enforcement kinds of actions.

Mr. FOGARTY. Dr. Terry, do you have anything to say?

Dr. TERRY. I would certainly agree with Dr. Anderson that there are many areas—and another area was the Division of Biologics Control—where we have a very important enforcement responsibility and do carry it out. Basically, in contrast to some of the arguments that we are interested only in the health aspect of the water pollution control, we in the Public Health Service are interested in all of the legitimate uses of water and I personally have no reluctance about going into enforcement activities where it is necessary to carry out the intent of the act and the program.

Mr. FOGARTY. Have there been any instances where you have refused to go in when requested?

NORMAL TIMELAG IN ENFORCING ACT

Dr. TERRY. No, sir. You see, when the act was first passed, in 1956, there were no enforcement actions for the first couple of years, but I think if the act were enacted for the first time today, that might be true for a couple of years after that. There have been, as Mr. Quigley said, 20 enforcement actions which have been started in one manner or another and comfortably, fortunately, only one of them has finally had to go to court because it could not be resolved through the first two steps of the procedure. But insofar as I know, I have not—and insofar as I know, the Surgeon General has not—turned down any enforcement actions which have been recommended to him by the program area. If any of these people know to the contrary—I do not know the details.

ADEQUACY OF ENFORCEMENT PROGRAM

Mr. FOGARTY. Mr. McCallum, you are not a doctor or a lawyer, are you?

Mr. MCCALLUM. No, sir.

Mr. FOGARTY. You are an engineer. So let us hear what the engineer has to say.

Mr. MCCALLUM. I am aware of these criticisms and I think part of the criticism that has been directed at the Public Health Service——

Mr. FOGARTY. The only reason I bring it up, if there is some well founded criticism, we ought to take care of the deficiencies. If the criticisms are not well founded, we want the facts on the record.

Mr. MCCALLUM. I think this criticism is partly due to some disenchantment of certain organizations with State programs, and particularly those in State health agencies. Mr. Chairman, you might wish to refer to a circularization of the enforcement activities of the States 4 or 5 years ago when the House Public Works Committee was considering new Federal legislation that might have enforcement implications. I know that various people who analyzed the responses from the Governors did not think the States had been very aggressive in enforcement. As Mr. Quigley indicated, we are sometimes classified the same way. But, on the other hand, certain groups have thought we have gone too fast on enforcement. I have been confronted by both groups and my reaction is that people who think we have perhaps done too much as well as those who think we have done too little, are entitled to their opinion and that the record will speak for itself. In this regard, more than a half billion dollars of construction will take place as a result of agreements reached in our enforcement activities to date. When agreements are reached in all 20 cases more than $1 billion of construction will take place. These cases involve more than 300 municipalities including some of the largest in the country and about the same number of industries.

Mr. Fogarty. Is there anything else you want to say, Mr. Quigley?

Mr. Quigley. No, sir. I do not think this is an issue that is ever going to be fully resolved to everyone's satisfaction. It is going to be argued, as Mr. McCallum pointed out—there are some people who think we are moving much too fast in this area. But for every one who says that, there are others who say we are not moving fast enough. There just is not any doubt about, that when we bring an enforcement case, as we are in Androscoggin, that we are going to disrupt an awful lot of situations, working regulations involving an awful lot of other programs.

Mr. Fogarty. You mean industry?

Mr. Quigley. Other State programs for which everything is on a nice, even keel and there is a good working relationship and along come the enforcement people, and they throw sand in everybody's face. I do not know how you can get around this. This is just one of our responsibilities.

(Discussion off the record.)

ABSORPTION OF INCREASED COSTS

Mr. Fogarty. The Senate added another $800,000 to the House bill last year but this was reduced to $100,000 in conference. We know that the costs you are absorbing in 1963 amount to about $300,000. How much was absorbed out of the congressional increase?

Mr. McCallum. We will have to provide that for the record.

(The material follows:)

Absorption of Increased Costs

Congress authorized $1,100,000 more than requested in 1963. This increase was to initiate the upper Ohio River Basin project, intensify the activity in three ongoing projects, provide additional support for enforcement actions to abate pollution in Puget Sound and on the Detroit River and to accelerate the research activities in the three areas specifically directed by Public Law 87–88. In connection with the absorption of increased pay costs and commissioned officers' increase for quarters and per diem, a total of $20,400 was applicable to this increase of $1,100,000.

COMPREHENSIVE WATER POLLUTION CONTROL PROGRAMS

Mr. Fogarty. Your largest increase is $2,428,000 and 150 positions for the comprehensive program for water pollution control. This part of the program is summarized in tabular and chart form in pages 136 and 138 which we will place in the record along with pages 139 through 150, which cover the program as it applies to each basin.

(The material follows:)

The following table summarizes the 1964 budget request for comprehensive programs for water pollution control and prevention.

Comprehensive program, active projects, 1964

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
A. Arkansas-Red River	22	$296,000	7	$115,000	−15	−$181,000
Lower Arkansas-Red River	7	65,000	--------	------------	−7	−65,000
B. Chesapeake Bay-Susquehanna River Basins	25	250,000	61	900,000	+36	+650,000
C. Columbia River Basin	27	236,000	35	400,000	+8	+164,000
D. Great Lakes-Illinois River Basin	188	3,180,000	213	2,785,000	+25	−395,000
E. Delaware River estuary	16	150,000	18	310,000	+2	+160,000
F. Upper Ohio River Basin	6	100,000	26	500,000	+20	+400,000
G. Lower Missouri River Basin (including Red River of the North and Souris River	--------	------------	8	100,000	+8	+100,000
H. New England river basins	--------	------------	9	150,000	+9	+150,000
I. Southeastern river basins	--------	------------	11	200,000	+11	+200,000
J. Tristate metropolitan area (New York, New Jersey, Connecticut	--------	------------	20	400,000	+20	+400,000
K. Basic program and flow regulation	33	291,000	66	680,000	+33	+389,000
Total	324	4,568,000	474	6,540,000	+150	+1,972,000

CURRENT STUDY SCHEDULE, (INTENSIVE PHASE)
COMPREHENSIVE PROGRAMS WITH ESTIMATED COST IN MILLIONS OF DOLLARS
JANUARY, 1963

BASIN PROJECT AREA	FISCAL YEAR																
	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
Arkansas - Red Rivers	▨	▨	▨	1.9	▨	▨											
Chesapeake - Susquehanna				▨	▨	▨	4.2	▨	▨	▨							
Colorado (Budgeted under Enforcement)				▨	▨	▨	3.5	▨	▨	▨							
Columbia (Incl. N. Pac.Coastal Basins)				▨	▨	▨	2.4	▨	▨	▨							
Great Lakes - Illinois River				▨	▨	▨	13.4	▨	▨	▨							
Delaware River					▨	▨	1.4	▨	▨								
Ohio River - Upper Basin						▨	▨	▨	2.8	▨	▨	▨					
Ohio River - Lower Basin (incl. Tennessee)								▨	▨	5.0	▨	▨	▨				
Missouri - Lower Basin (Incl. Red River of North)							▨	▨	3.0	▨	▨						
New England River Basins (Inc. Connecticut R.)							▨	▨	4.5	▨	▨	▨					
Southeastern River Basins							▨	▨	▨	3.8	▨	▨					
Tri-State Metropolitan Area							▨	▨	▨	12.0	▨	▨	▨				
Western Gulf Drainage Basins (Incl. Rio Grande-Pecos, Texas, & Sabine)								▨	▨	2.9	▨	▨	▨				
Alaska Drainage Basins								▨	▨	1.6	▨	▨					
Central Pacific Drainage Basins								▨	▨	▨	2.7	▨	▨	▨			
Mississippi River - Upper Basins									▨	▨	▨	2.2	▨	▨			
Middle Atlantic Drainage Basins										▨	▨	▨	2.1	▨	▨	▨	
Great Basin											▨	0.9	▨				
Hawaii Drainage Basin												▨	1.1	▨	▨		
Missouri River - Upper Basins												▨	▨	2.2	▨	▨	
Mississippi River - Lower Basins (Incl White River)													▨	▨	2.8	▨	▨
Summary:																	
Projects started in Fy	1	0	0	4	1	1	4	4	1	1	1	2	1	0	0	0	0
Projects operating during FY	1	1	1	5	6	7	10	14	15	15	12	13	10	6	4	3	1
Projects closed end of FY	0	0	0	0	0	1	0	0	1	4	1	4	4	2	1	2	1

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
A. Arkansas-Red River Basins	29	$361,000	7	$115,000	−22	−$246,000

The intensive investigation and planning phase of the Arkansas-Red River Basins water quality conservation project undertaken by the Public Health Service in 1958 has been completed. The report to be submitted to the Congress in calendar year 1963 will list the conditions found, remedial measures proposed, potential benefits of reduction in natural and man-made pollution, and will serve as the guide to Federal, interstate, State, and local agencies toward the control of the salt pollution problem in these two water short river basins. The construction of regulatory and control works will be undertaken by other Federal agencies and by local interests.

A maintenance and surveillance staff of seven persons is proposed to observe and adjust details as construction agencies begin to build the water control and regulating system. This residual staff will also provide operating guidance to the agencies having control of the water routing in the two river systems. Control of water quality will depend on the effectiveness of control and the proper use of available high grade dilution water. The flow and quality of water must be constantly and adequately monitored at approximately 30 key points in the two basins if a satisfactory operating system is to be maintained based on the hydrologic and quality patterns discerned during the intensive project period.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
B. Chesapeake Bay-Susquehanna River Basin	25	$250,000	61	$900,000	+36	+$650,000

The Chesapeake Bay-Susquehanna River Basin project encompasses the Chesapeake estuary, the largest fishing and recreation area on the Atlantic coast, with a population of approximately 10 million. The population is expected to triple by the year 2010. It also includes a major water resource of the eastern United States, the Susquehanna River where acid mine drainage and other pollution limits the potential of the basin for municipal and industrial development.

To date this program has assembled a technical staff, formulated a study plan which provides for maximum coordination with State and Federal agencies, and has made considerable progress in the assembly of present water supply use and waste discharge data. Basic data inventories of water supply and waste disposal facilities will be 90 percent complete in the New York, Pennsylvania, and Maryland portions of the project area and 33 percent complete in the Virginia portion by the close of 1963. Arrangements are nearly completed with the Corps of Engineers, Department of the Army, for joint financing of economic studies to be utilized by both agencies, and a contract has been negotiated with the Chesapeake Bay Institute for the evaluation of existing oceanographic data on the Bay. The report on the latter study will provide information on gaps in existing knowledge and a firm base for decisions on additional studies needed, including the need for and scope of instrumentation in the Bay. A data-processing manual was prepared by the project outlining procedures for data storage, retrieval, and analysis. Integrated into these computer-adaptable techniques is a river-mile coding system. The codes appearing on specially prepared State maps, and the processing systems. follow procedures designed by the Basic Data Branch of the Division of Water Supply and Water Pollution Control.

Intensive activities in 1964 will be concentrated in the Susquehanna portion of project's study area. A field station will be opened in the vicinity of Harrisburg late in 1963 or early in 1964. Inventory activities in the States of New York and Pennsylvania will be completed early in 1964. Compilation of existing data on acid mine drainage in the area will also be completed. In cooperation with the Pennsylvania Department of Health, automatic monitoring stations will be installed in the north and west branches of the Susquehanna River and in the Juniata River. Time of passage studies will be made using Rhodamine B dye on the west and north branches of the Susquehanna as well as on the main stem. Weekly sampling at seven multiparameter automatic monitoring stations in New York and Pennsylvania will be carried out through the entire fiscal year. Reports will be issued which summarize all inventory data pertinent to the area and which give analyses of the present water quality situation with particular emphasis on waste assimilative capacity, and acid mine drainage.

In 1964 in the Chesapeake Bay area of the project, oceanographic studies of the Potomac estuary will be initiated. Data collection and field reconnaissance for time of passage studies and other intensive field studies in Virginia and Maryland will be made. Arrangements and planning for space, equipment, and personnel for a field station in the Baltimore-Annapolis vicinity will be completed in 1964, so that intensive operations in the Chesapeake Bay area can begin in 1965.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
C. Columbia River Basin project	27	$236,000	35	$400,000	+8	+$164,000

The project covers the States of Washington, Oregon, and parts of Idaho and Montana. A plan was devised in which the area was divided into 12 major subbasins. Priority of investigations was assigned after considering the plans for water resources developments of other Federal agencies, and the anticipated location and rate of population growth and industrial development.

These considerations led to a grouping of the 12 subbasins for a three-phase study plan. The first phase concerns subbasins having existing problems associated with municipal, industrial, and agricultural development.

Water quality is to be protected for all beneficial uses, but special problems in the Pacific Northwest are preservation of values associated with recreation, fish, and other wildlife. Of special importance are the streams used for salmon spawning and the beds used for the production of oysters. Pollutants include agricultural chemicals, heat, radioactivity, irrigation return flows, and silt resulting from road building, forestry, and other land uses.

Full-scale investigations commenced in 1962 and are being intensified in 1963. By the close of 1964 the entire first phase of the overall study plan (investigations in the Yakima, Willamette, Umpqua, Upper Snake, and Lower Columbia River Basins) will be substantially completed. Under contract with the Public Health Service, Washington State University at Pullman, Wash., constructed a scale model of the Umpqua River Estuary. Tests with this model have demonstrated the probable dispersion of wastes in estuaries similar to that of the Umpqua River in the Pacific Northwest.

A major investigation throughout the Pacific Northwest concerns silt in surface runoff. Silt is particularly harmful to salmon and other game fish, and imposes an economic burden on reservoirs and flow regulation structures. A report of sedimentation production in the Umpqua Basin of Oregon has been published, and work is proceeding to determine modifications in forestry. road building, and other land management practices which might be instituted to minimize the silt load in surface runoff.

The Columbia River Basin project is receiving active assistance from the States of Washington and Oregon. As the study moves into Montana and Idaho, arrangements have been made whereby those States will participate in the work. Conservation groups and fishery agencies are supporting the project and the Public Health Service is working in close coordination with the Federal agencies for water resources development. In this respect the U.S. Army Engineers and the Bureau of Reclamation have requested that the work be expedited to bring findings abreast of their plans so that flow regulation and other water quality aspects can be incorporated in their plans for the design and operation of multiple-use water resource structures.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
D. Great Lakes-Illinois River Basin project	188	$3, 180, 000	213	$2, 785, 000	+25	−$395, 000

The establishment of a comprehensive program for improving and preserving the quality of water in the Great Lakes-Illinois River Basin is the largest and most complex single project initiated under the Federal Water Pollution Control Act. The Great Lakes form the world's largest impoundment of fresh water and constitute a priceless national resource. Their quality affects the health and welfare of millions of people and will materially influence the economic development of a large portion of the United States. Concern about the deterioration of water quality caused by municipal and industrial waste discharges and about the general lack of good water quality management practices has been expressed by the Congress, the Justice Department, and the special master appointed by the U.S. Supreme Court. Resolutions and requests urging the conduct of the project have been received from many interests, including the Great Lakes Commission, the larger cities, and the conservation groups.

In cooperation with other Federal, State, and local agencies, immediate threats to water quality are being identified; measures necessary to correct existing deficiencies are being explored; projections of water needs and waste water discharges in the future are being made; and a long-range program of sequential measures necessary to preserve the quality of the waters is being established.

In 1964 this project will be in its fourth year, with 3 more years anticipated to complete the intensive studies and presentation of recommendations for a comprehensive program. Significant progress will have been made by the close of 1963. The highlights during 1963 will be:

(1) *Close cooperation with and assistance to the Justice Department.*—Reports on various aspects of the Illinois River and its water quality with remedial recommendations have been useful to the Justice Department, and laudatory comments on project efforts have been received from that Department. As work on the project progresses, additional information will be transmitted for use by the Justice Department.

(2) *Completion of the Illinois River portion of the project.*—Recommendations will be made to prevent and abate pollution based upon engineering, laboratory, economic, and demographic studies.

(3) *Full-scale field and laboratory studies of Lake Michigan.*—A network of current stations has been installed in the lake, and the use of sensitive recording devices will provide information concerning lake currents, wind, temperature, and other data. This information will be used to study the dispersal of pollutants in the lake, and will provide the basis for recommendations to prevent pollution. This is the first time that such instrumentation has been used on a lake, and several of the devices have been developed specifically for this project.

(4) *Studies initiated in the area of Lake Erie.*—Studies have been initiated on Lake Erie to determine the sources of wastes discharged into the lake and the influence of waste on water quality. A field station has been opened in Cleveland, Ohio. Of special interest in Lake Erie is the effect of accumulated waste products on the fish population.

The studies are being conducted in close cooperation with the Corps of Engineers, the Fish and Wildlife Service, the Great Lakes Fisheries Commission, State and local agencies, universities, and privately endowed institutes.

In 1964, the budget proposed is $395,000 less than 1963; however, because of a reduction in equipment needs and increases in mandatory items, there is a program increase of $205,000 available for expansion. There will be an increase of 25 positions on the project. The proposed expansion in personnel stems from the need to establish and operate several field stations in 1964, such as the station at Cleveland, Ohio, which will be concentrating on the Lake Erie phase of the project. Major activity during 1964 will include—

(1) Completion of the report concerning the quality of the waters of Lake Michigan, and recommendations for abating and preventing pollution in the lake.

(2) The conduct of full-scale engineering and laboratory studies of the waters of Lake Erie, and a parallel study of the economy of the area. The sensitive recording devices will be transferred from Lake Michigan to Lake Erie, and intensive studies of the water quality of Lake Erie will be conducted in the vicinity of all heavily populated areas.

(3) Reconnaissance engineering and laboratory studies of Lake Ontario and Lake Huron will be initiated, and several field stations will be established along the lake shores.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
E. Delaware River estuary	16	$150,000	18	$310,000	+2	+$160,000

The Delaware River Basin project was initiated in 1962. Upon completion of a water resources development plan by the Corp of Engineers in cooperation with other Federal and State agencies, it was found that extensive studies in the lower reaches of the river were needed before a comprehensive water quality control program could be developed. Information derived from this study is needed by communities along the estuary which are planning expenditures for water supply and sewage treatment works. For instance, the city of Philadelphia is planning to spend $27 million on the improvement of water purification and water intake facilities and needs reliable information on the quality of raw water and the fate of waste discharges in the Delaware estuary. Because of their need for information based on fundamental studies, Delaware, New Jersey, Pennsylvania, the Inter-State Commission of the Delaware, and the city of Philadelphia petitioned the Public Health Service to undertake the investigations necessary for development of a comprehensive water quality control program.

In 1962, relationships and responsibilities with State and interstate agencies were established. A large-scale dye study was made of the estuary to compare actual water movements with results obtained from a physical model built and operated by the Corps of Engineers. The tests verified the need for a more comprehensive full-scale study of the estuary. Studies have been started to define the mixing and dispersion of wastes discharged into the estuary. These results are of particular significance in relation to the proposed construction of Federal reservoirs in the Upper Delaware Basin.

As work progresses, additional automatic water quality monitoring stations will be procured and installed, mathematical models and automatic data processing equipment will be utilized to describe the effects of the waste on the water, predict the impact of anticipated waste loads, and evaluate the effect of proposed water pollution control activities. Investigations will be made to determine the effects on the estuary of high-temperature wastes being discharged from power-generating stations, oil refining complexes, and the primary metal industries in the area. Marine and oceanographic studies will be undertaken in the lower reaches of the estuary in 1964.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
F. Upper Ohio River Basin	6	$100,000	26	$500,000	+20	+$400,000

The Congress authorized the beginning of a comprehensive water pollution control program for the upper Ohio River Basin in 1963. This area is the industrial heartland of America and has some of the greatest unsolved pollution problems within its confines; for example, the acid mine drainage problem and the synthetic organic wastes problem. A major portion of the upper Ohio River Basin has been classified as an economically depressed area. It is anticipated that a cleanup of the waterways in this area will restore vast quantities of water resources for municipal and industrial use and could be a key to industrial development in these depressed areas. Moreover, a cleanup of these waterways will enable the development of recreational areas throughout the mountains of Pennsylvania, West Virginia, and eastern Ohio. Streams here are now so badly foulded that fishing and recreational use of many reaches of the streams are greatly limited. The development of a large recreation industry in an economically depressed area is largely contingent upon an immediate and sizable effort to clean up the streams and lakes. The Senate Select Committee on National Water Resources noted that, due to water pollution, there has been a steady decline in recreational opportunities in an area of increasing population.

To date, a temporary project headquarters has been established in Wheeling, W. Va.; a permanent headquarters in the Wheeling area is being sought; a project director has been selected and a nucleus staff is being recruited; detailed project plans delineating specific activities are being drawn up; contacts are being made with Federal, State, interstate, and local agencies (Sanitary Engineering Center, Department of the Army Corps of Engineers, Ohio River Valley Water Sanitation Commission); States in the basin area will be surveyed to obtain inventory data on industrial wastes, sewerage, and municipal water supplies; and specifications are being developed for a mobile laboratory unit.

In 1964, the entire activity of the project in the upper basin will be intensified. Staffing of the Wheeling office will be completed. In addition, the general study plan for the entire basin (both upper and lower) will be completed and work on implementing the specific study plan for the upper Ohio Basin will take place. Further inventory data will be collected and evaluated and problem areas will be identified. Gaps in the existing data will be located and intensive field studies, including the placement of monitoring equipment in various streams, and laboratory analysis will be accomplished to overcome and close these gaps. A laboratory in Wheeling will be staffed, equipped, and will become operational. The mobile laboratory unit will be delivered and placed in the field to supplement the fieldwork being done.

The Corps of Engineers, Department of the Army, has contracted for an economic base study for the major portion of the Ohio River Basin. The report on this study will be made available to the Ohio River Basin project and the project will develop specifications for an economic base study to cover areas of the Ohio River Basin that were not previously studied, such as the Tennessee River.

In 1964 studies under section 2(b) of the Water Pollution Control Act will be conducted on the Kanawha and the Little Kanawha Rivers, W. Va., for the Corps of Engineers, Department of the Army. Other studies requested by the Corps of Engineers will be given the highest priority and the results of these studies will be included in the comprehensive water resources development plan.

Plans also will be made in 1964 for the work to be done on the lower Ohio River Basin. This study is expected to get underway in 1965 and will probably begin in the Evansville, Ind., area.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
G. Lower Missouri River and Red River of the north basins	--------	------------	8	$100,000	+8	+$100,000

The Missouri River Basin area is a growing area. During the decade from 1950 to 1960 the average increase in population for the basin was almost 12 percent and at the end of the period over 9 million people resided there. The growth of industry was even more spectacular with an overall increase of about 75 percent. Industries in the food and kindred products classification are the dominant industrial groups.

It has been estimated that there are nearly 1,700 municipal and industrial sources of pollution in the basin. While there has been progress in recent years toward providing treatment and improving water quality, it is estimated that about 50 percent of the installations fail to provide adequate treatment.

The Missouri Basin was highlighted by the Senate Select Committee on National Water Resources as one of the water-short areas where planning for maximum utilization should be undertaken. It is essential that such plans incorporate water quality considerations.

The active planning of reservoirs by the Corps of Engineers and the Bureau of Reclamation in the Missouri River Basin has demonstrated the immediate need for undertaking a comprehensive water pollution control program. Estimates of the effect of these structures on water quality and the need for storage for regulation of streamflow for water quality control should become part of the plans. It is essential that this information be provided to the construction agencies at the time of their active planning if maximum economy is to be obtained. The investigations needed for development of a comprehensive program are needed by the Secretary of Health, Education, and Welfare for his advice and views on the needs and benefits of flow augmentation as required by section 2b of Public Law 660. Exploratory conferences with the Corps of Engineers and the Bureau of Reclamation indicate that the most pressing need for information exists in the Kansas, Osage, Souris, and Red River of the North River Basins.

The 1964 budget will permit the assembly of a staff nucleus, the preparation of a detailed project plan delineating specific studies and methods of operation, development of plans for coordinating with State and Federal agencies, acquisition of initial facilities and assembly and analysis of existing data.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
H. New England river basins	--------	------------	9	$150,000	+9	+$150,000

The area included in the comprehensive program for the New England basins is bounded on the west by the Great Lakes-Illinois River basin project and the tristate metropolitan area. With the initiation of the New England and the tristate metropolitan projects, comprehensive programs will be under development for the entire heavily populated northeast area of the United States. Experience has demonstrated that major problems of water supply and pollution control cannot be solved on a piecemeal basis, and this experience is amply demonstrated in the New England area where water resources and industrial development are interwoven with the interest of the neighboring regions. It is desirable to undertake this project in conjunction with the investigations in progress in the Great Lakes-Illinois River basin and the tristate projects.

Recent meetings of the Northeast Resources Council (Federal and State interagency committee on water resources) have stressed a need to begin the actual design of a program to regulate New England waters for all beneficial purposes.

A start at this time permits the comprehensive program for water quality management to develop plans for construction of dams and reservoirs in coordination with the Corps of Engineers and State agencies. Connecticut, Massachusetts, and the New England Governor's Council have requested that the Secretary initiate studies to develop a comprehensive water quality management plan simultaneously with the water resources study which is being initiated by the U.S. Army Corps of Engineers in the Connecticut River Valley. The Governors of the States of New Hampshire, Vermont, Massachusetts, and Connecticut have pledged their cooperation with the Department of Health, Education, and Welfare to provide an effective program.

Rivers of the New England States have been subjected to heavy municipal and industrial waste loads. The most advanced knowledge of municipal and industrial waste treatment must be applied with vigor if existing problems are to be solved. To prevent waste of time, effort, and money, a comprehensive program coordinating the efforts of local, State, and Federal agencies is sorely needed.

In 1964, a project director and a cadre of technical personnel will be assigned to the project. Working relations will be established with the State, interstate, and Federal agencies. Existing data on water supply waste disposal facilities will be collected, and a start will be made on the investigations directed toward solution of the most pressing problems.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
I. Southeastern river basins	--------	------------	11	$200,000	+11	+$200,000

The southeast river basin includes Florida and portions of Georgia, Alabama, and Mississippi. Increasing industrialization of the area with the concurrent growth in population centers together with the increased use of insecticides, herbicides, and other toxic chemicals and nutrients have created water pollution problems. These problems threaten the quality of water which is generally good throughout the southeastern river basin. The increasing tempo of local, State, and Federal agencies in constructing dams and reservoirs makes it essential that studies be initiated immediately so that quality problems may receive consideration during the planning of dams and diversion works.

The Southeastern Study Commission was authorized by Congress to plan for optimum development of land and water resources in this region. The investigations and deliberations of the study commission have brought out the need for the development of a water quality management program in conjunction with the development of the growth of the economy of the region. Testimony was presented to the Senate Select Committee on National Water Resources considering the southeastern river basin to the effect that the most critical aspect of efficient water resources development is the lack of facilities planning based on a foundation supported by the collection and evaluation of basic data. The committee was urged to strengthen the role of the Public Health Service in cooperation with State and local agencies in the development of comprehensive programs.

It is proposed that studies be initiated in the Apalachicola-Chattahoochee-Flint River Basin. This basin, with a land and water area of 19,800 square miles, is a complex system reaching into the three States of Alabama, Florida, and Georgia, and includes the metropolitan area of Atlanta.

Recent studies indicate that the population of the Apalachicola-Chattahoochee-Flint River Basin will be 4⅓ million people in the year 2000, an increase of 145 percent over 1960. Included in this is a predicted urban population of about 3.2 million people, or an increase of 210 percent over 1960.

This river system is being developed for navigation, fish, and wildlife, hydro and steam power, recreation, and water supplies. Federal, local, public utilities, and industrial water developments are already located at 18 sites in the basin. Flows sufficient to assimilate waste discharges have not always been maintained, and near critical conditions have occurred at certain times of the year. As growth occurs and changes are made in the regimen of the streams, this problem could become very critical.

The budget proposed for 1964 would permit the assembly of a staff nucleus and the obtaining of initial facilities required to conduct studies necessary to the formulation of a comprehensive water pollution control plan. Agreements will be reached with other agencies concerning cooperative activities. Inventory data will be collected and evaluated.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
J. Tri-State metropolitan project (New York, New Jersey, and Connecticut)	--------	------------	20	$400,000	+20	+$400,000

The tristate project will include the Hudson River watershed, the New York Harbor area and tributaries, Long Island, and portions of the coastal areas of New Jersey and Connecticut.

The tristate metropolitan area is unique in size, projected growth, and complexity. At present the region contains approximately 16 million people in an area of 7,000 square miles. It includes 21 counties and 550 municipalities located in 3 States. There are more than 1,400 different units of local government. It has been estimated that population will grow to 24 million in the next 30 years and double in the next 50 years. Job opportunities will rise from the present level of 6,500,000 to more than 9,500,000, and the urbanized area will double by 1985.

Recent developments have focused attention on the need for a comprehensive approach to water-pollution control. Polluted waters of Raritan Bay were implicated in an outbreak of infectious hepatitis and, as a result, enforcement action was initiated by the Public Health Service against polluters of the interstate waters. The Metropolitan Regional Council, a cooperative group composed of the leading elected officials of the counties and municipalities in the region, took formal action to request the start of this project. In its request the council recognized the fact that a piecemeal approach to the problem would be ineffective.

There are numerous manifestations of deteriorating water quality in the area. Recreation facilities and the value of prime residential property along the shores of the Great South Bay are threatened by natural pollution as well as pollution of manmade origin; and pollution of New York Harbor has long been a matter of concern. Ground water, a principal source of high-quality water, has been seriously contaminated on Long Island by detergents and other chemical residuals of domestic and industrial waste. Doubt has arisen concerning the continued use of the New York Bight as a dumping place for municipal and industrial wastes.

Various local governments in the tristate metropolitan area have offered their cooperation and support. The New York State Park Authority, the New York State Health Department, and the Public Health Service have cooperated in previous studies of the water-pollution problems in the vicinity of the Great South Bay.

This project will complement work in water resources development in the Hudson River Valley now under consideration by the U.S. Army Engineers and the International Joint Commission.

Funds will be used in 1964 to recruit a staff of about 20, including a project director and key technical personnel. This staff will evaluate existing information, identify the portion of the work which should be accomplished by contract or reimbursable arrangements, and work with other organizations to achieve coordination. Initial facilities and equipment needed will be procured and field investigations and measurements will begin in the grossly polluted New York Harbor area. Subsequent investigation will be expanded to include Long Island Sound, the coastal plains, the Hudson Tidal Basin, and the upper Hudson Basin.

	Estimate, 1963		Estimate, 1964		Increase (+) or decrease (−)	
	Positions	Amount	Positions	Amount	Positions	Amount
K. Basic program and flow regulation	33	$291,000	66	$680,000	+33	+$389,000

These funds provide for the following: (1) General direction, technical support and guidance to ongoing comprehensive projects from the Sanitary Engineering Center, Washington, and the regional offices; (2) conduct of preliminary comprehensive planning in basins where comprehensive projects are not yet underway; and (3) execution of responsibilities under section 2(b) of the Federal Water Pollution Control Act in areas where comprehensive projects are not underway.

Section 2(b) of the act requires consideration of streamflow regulation to control pollution not otherwise susceptible to control. This section also requires the Secretary of Health, Education, and Welfare to advise the Congress on the need for and the value of storage for regulation of streamflow for the purpose of water quality control. Development of recommendations on water storage requirements for this purpose in reservoirs constructed by Federal agencies is now and will continue to be a part of any basinwide pollution control and prevention program. It is now necessary, however, to develop such recommendations (at least on a restricted area basis) for sites of proposed water storage in basins for which comprehensive water pollution control programs are not yet under development.

The budget increase is requested for the section 2(b) work. The request takes into account the 1964 plans of the Federal water construction agencies in accordance with recent instructions from the Director of the Bureau of the Budget. The budget recognizes that a common factor in the planning work being done by the Soil Conservation (Department of Agriculture), the Bureau of Reclamation (Department of Interior), and the Corps of Engineers (Department of the Army) is that of water quality management—a prime responsibility of the Department of Health, Education, and Welfare.

The discharge of this responsibility rests upon technical studies of the ability of streams to assimilate pollution loads remaining after treatment, and the regulation of streamflow that will be necessary to increase this assimilative capacity where its inadequacy would otherwise result in pollution.

BENEFITS OF RIVER BASIN SURVEYS

Mr. Fogarty. What benefits will come from these surveys? Try to be specific and tell us what these will be used for that will make them worth the money we are spending.

Mr. McCallum. What these programs are intended to do is provide a blueprint that can be kept up to date and used over a period of perhaps as much as 50 years, so that in the development of the land and water uses as they are projected in the future, we will be able to utilize these resources without developing pollution problems as we have in the past in many parts of the country. We will naturally evaluate the current problems and come up with solutions to take care of them.

But more important, as in the Great Lakes project, is to be able to work out a plan with the other Federal agencies, with the States, with the interstate agencies, municipalities, and industry, so that we can know what we can do at the south end of Lake Michigan, along the Detroit River, along Lake Erie, in the year 2000 and not do as some biologists fear, create a dead lake. This is the pattern we are trying to follow in all of these river basin programs. It is a dynamic program with all the agencies and States who are participating and cooperating with us keeping it alive and using it as a guide for the present and the future.

The States are already using them in determining where new industries may be located.

Mr. Fogarty. What are some of the States using them?

Mr. McCallum. The States of Washington and Oregon. Our work on the Columbia River basin is serving this need. The information that we have developed, even though the program is not yet finished, has been used as a guide by both States in determining the locations for new industries, developing water resources projects, and planning land uses.

ARKANSAS-RED RIVER STUDY

Mr. Fogarty. The Arkansas-Red River study is almost completed at a cost of almost $2 million from this appropriation. What specific benefits do you expect from that?

Mr. McCallum. The general recommendations that we have made can be carried out by the Corps of Engineers and others for the control of natural brine pollution in the streams. If the States are able, and I am sure they will be, through regulatory action, if necessary, to take care of manmade pollution, it is conceivable to restore 30 million acre-feet of water a year so that it could be used for municipal, industrial, or recreational purposes. I believe the latest figures we had on the value of the benefits that would accrue from these improvements were about $5 million or $6 million a year. A report on this activity is being prepared and will be submitted to Congress this calendar year.

Mr. Fogarty. What would be the benefits to the public?

Mr. McCallum. We are working on cost and benefit relationships with the Corps of Engineers. Some of these are rather complicated solutions. In some instances, we have to reinject springs back into a subterranean strata, sometimes at considerable depth. There are several small springs in the basin. One at Estelline, Tex., produces, I believe, 500 tons of salt a day, discharging into the Red River. In some way we have to cap that source of pollution to keep it from coming to the surface or reinject it into the earth. There have been suggestions of running a pipeline to the Gulf of Mexico. Some of these proposals may not be economically feasible today, but when one realizes that in 1956 the State of Oklahoma failed to get $250 million capital investment in new industry—not because of a shortage of water—but because of poor quality water in these two basins, the economic feasibility of these undertakings seems more realistic.

RESEARCH GRANTS

Mr. Fogarty. Your next largest increase was $1,003,000 for research grants. In addition to the costs of continuing projects already going, it will allow you to finance 58 new projects in 1964, which is an increase of 16 over 1963. Is that right?

Mr. McCallum. That is right.

Mr. Fogarty. How many good applications do you estimate you will be unable to finance in 1963 and how many in 1964?

Mr. McCallum. We will have 57 approved applications at the end of fiscal year 1963, and I believe the funding would require about $1,300,000. At the end of June 30, 1964, we estimate 81 approved applications valued at $1.7 million.

Mr. Fogarty. Supply for the record some examples of worthwhile results from these research projects.

Mr. McCallum. Yes, sir.

(The material follows:)

Research Grants

UNIVERSITY OF COLORADO

This investigation is concerned with the factors that influence the survival and isolation of enteric bacterial pathogens and viruses from sewage, sewage contaminated irrigation water, and truck crops irrigated with this water. Major emphasis is being placed on developing and improving quantitative techniques for the estimation of these disease agents. Assessment of the public health significance of using sewage-contaminated water for the irrigation of crops is a major objective.

UNIVERSITY OF RHODE ISLAND

This research concerns the nature and role of soluble algal substances produced by phytoplankton and their effect on bacteria in marine waters. Field studies will examine bacteria-phytoplankton interrelationships on a seasonal basis and will include: (1) Correlation of the numbers and types of these two communities, (2) assays of water "condition," (3) the concentration and types of certain organic compounds of algal origin, and (4) the antibiotic activity of specific phytoplankton species against marine and terrestial bacteria.

OREGON STATE UNIVERSITY

This research includes a broad study of ocean outfalls as affected by currents, boundary geometry, type of outfall, and waves. A method of prediffusing the sewage with ocean water in the outfall line prior to final discharge into the receiving body and also the improvement of present multiport outfall design, are under study. The effect of orbital velocity of long waves, such as those encountered in the North Pacific, are being investigated both analytically and experimentally.

UNIVERSITY OF WISCONSIN

This investigation is designed to contribute to the fundamental understanding of the characteristics of gravity-type circular sedimentation basins. Three major aims are: (1) To determine the hydraulic characteristics of circular sedimentation basins; (2) to determine the hydraulic effects of various inlet and outlet configurations in circular tanks; (3) to compare the characteristics of a circular basin with those of a rectangular basin under similar flow conditions. Laboratory studies to correlate hydraulic characteristic data with actual efficiency of removal of particulate matter will be made.

UNIVERSITY OF WISCONSIN

In another research project at this university, a study is being made of organic substances of biogenic origin, biologically active in extremely small quantities and having great ecological significance. Such materials in lakes exert effects on other organisms. Because vitamin B_{12} is biologically active in small quantities, it has been chosen for study in order to test some of the concepts in one or more Wisconsin lakes. Information is being developed relative to the distribution of this vitamin in lakes and the details of its production.

Mr. FOGARTY. In what field are you giving particular emphasis now?

Mr. McCALLUM. In research?

Mr. FOGARTY. Yes.

WASTE TREATMENT RESEARCH

Mr. McCALLUM. I think the work we refer to as "advanced waste treatment" demands high priority. It is one of the most important in this field. What we mean by "advanced waste treatment" is to be able to take the used water supply of a community—the sewage—and at least restore it to good quality water before discharging it to a stream. If not immediately suitable for drinking water, we should be able to remove enough of the impurities so that the water can be used for recreational purposes down the stream.

Now, our present method of treatment which has been improved on but little, fundamentally, since 1916, just will not do that. That is the crux of the problem in Chicago.

Mr. FOGARTY. What is the trouble in Chicago?

Mr. McCALLUM. The fact is that we just do not know how to treat sewage well enough to put it into a waterway the size of the Illinois Waterway without creating nuisances. These are problems we must solve within the next 20 years, and we are encouraging university people to tackle certain aspects of this, too. We are working at the Taft Center and under research contracts with certain universities and industries on this problem. But it will require a much larger effort than is now being applied. We are also encouraging research grant applications along this line. I might add that each of the three research areas specified in our act represents an area of great importance. The research done so far has enabled us to make a good start in developing the basic equipment and methodology needed for the job. But an enormous amount of work, laboratory bench work and field research, remains to be done. The studies already done on low flow augmentation have pointed up highly complex problems of water quality resulting when free flowing streams are impounded. In using regulated discharges from reservoirs for water quality control, we have found that a new science of stream management must actually be developed. In our research on advanced methods of waste treatment, we have not yet entered the really expensive phase. This comes when we go from the laboratory to the pilot plant. Our scientists and engineers estimate that pilot plant research is approximately 10 times that of laboratory feasibility studies. We shall soon be ready to go to pilot plant work on advanced waste treatment processes—adsorption on activated carbon utilizing thermal regeneration of carbon, and the use of foaming to remove organics of a persistent nature. In our research on identifying and measuring the effects of pollutants, we are also entering a highly costly type of work. We are dealing here with very low but significant concentrations of synthetic chemicals for which conventional methods of analysis and evaluation are almost completely inadequate. Very expensive equipment such as the mass spectrometer must be acquired and new instruments must be developed. Extensive and highly complex and costly research of a fundamental nature is necessary before we will be able to measure, with confidence, the subtle long-term effects of pollutants on aquatic and wild life and on humans. The act for these three specified areas of research authorized annual appropriations not to exceed $5 million and an aggregate total of appropriations not to exceed $25 million. This budget includes a total of $1.9 million to carry out these provisions.

TRAINING GRANTS

Mr. Fogarty. The next largest is $900,000 for training. This is a considerable increase. Tell us what the needs are in this area.

Mr. McCallum. This will enable us to increase by 16 the number of new training grants to universities and schools to strengthen their programs and train more engineers and scientists. This field has been in short supply since World War II. The shortage is becoming more critical each year. I believe testimony was given before your committee 3 or 4 years ago to the fact that the country would need over the next decade 1,000 scientists, biologists, biochemists, physicists, and people like that; and 400 engineers each year. I believe that the number being turned out by the schools, that is, at the graduate level in this field, is less than 300 as compared with the needed 1,400 per year.

We are trying by these grants to help increase their number.

PERSONNEL INCREASE FOR ENFORCEMENT ACTIVITIES

Mr. FOGARTY. The only other large increase is $709,000 and 60 positions for enforcement activities. So this is being stepped up by 60 people. Will you supply for the record a complete breakdown of these 60 positions and how this will help in your enforcement activities?

Mr. MCCALLUM. Yes, sir.

(The material follows:)

1964 positions increase: Enforcement (+60)

Grade	Title	Number	Grade	Title	Number
GS-14	Engineer	2	GS-5	Secretary-steno	2
GS-12	Biologists	2	GS-4	Clerk-steno	4
	Engineers	2		Lab-technicians	5
GS-11	Chemists	2	GS-3	Clerk-typists	3
	Oceanographer	1		Commissioned officers senior grades	3
	Economists	2			
GS-9	Bacteriologists	2		Wage board	16
	Biologists	5			
GS-7	Biologists	4		Total	60
	Chemists	5			

NEED FOR ADDITIONAL ENFORCEMENT POSITIONS

To carry out the mandate of Congress in a practical and effective manner, it is considered necessary to expand the program. These positions will permit an orderly acceleration of the program at a pace in balance with present capabilities.

The increase requested will enable the activity to expand its program of conducting reconnaissance surveys to identify polluted interstate waters, performing investigations of intrastate pollution of navigable waters, initiating new enforcement actions, and controlling pollution from Federal installations.

Reconnaissance surveys and investigations will be made to identify interstate pollution problems in specific geographical areas and to determine if these problems require enforcement. The Secretary of Health, Education, and Welfare is authorized to take enforcement action where these surveys and investigations reveal occurrence of interstate pollution. In addition, whenever requested by the Governor of any State to take enforcement action on intrastate navigable waters, the Secretary must determine if the water use damage is sufficient to warrant Federal enforcement action.

Initiating new enforcement actions will require a substantial portion of the new positions requested. It is difficult to ascertain the number of actions to be initiated; however, based on past experience, we have estimated two major projects for 1964. Federal enforcement authority is frequently invoked in situations where highly complex scientific and technical problems must be solved and where extensive informational gaps must be filled before remedial action programs can be established. The Federal Government is responsible for securing that information which sometimes necessitates activating and operating field studies and investigations as a means of securing the data to solve the problems and securing data needed to develop remedial action programs. State and interstate cooperation is always sought.

These studies and investigations require a minimum of 2 years to complete with resident teams of engineers, physical and natural scientists, economists and supporting personnel working at the action site if meaningful and conclusive data is to be developed. These teams will go "on streams" to identify and measure organisms and toxic substances endangering the health and welfare of the people in affected areas, to inventory sources of industrial and municipal wastes causing or contributing to the pollution problems, and to discover the casual relationship between pollution and interference with water usage. Studies are also conducted to assess the damage to aquatic plant and animal life. particularly commercial and sport fish, municipal and industrial water uses and the like. These teams may also have to conduct studies to find solutions to problems unique to certain water bodies. They also study the problem of rain and snow storms, effect of tides and currents and economic and demographic problems.

The extent and scope of studies depends on the missing data, the pollution problems, and areas involved. The findings from these studies and investigations are a key to the type, cost, and timing of remedial action programs.

Controlling pollution from Federal installations is another function requiring additional staff. The Federal Water Pollution Control Act directs all Federal departments and agencies to cooperate with the Department of Health, Education, and Welfare in abating and controlling water pollution from their installations. As a first step to putting the Federal house in order and providing leadership, an inventory of installations has been completed. In 1964 the Department will operate a program for evaluating the situation at each installation discharging waste waters independently of a municipal sewer system, and offer use of technical consultations where needed to correct any disposal system found deficient.

ACCOMPLISHMENTS OF ENFORCEMENT ACTIVITIES

Mr. Fogarty. Supply for the record what you have accomplished during the past 2 or 3 years in cleaning up streams as a result of enforcement activities.

(The information follows:)

Enforcement Activity, July 1, 1961, Through February 1963

ENFORCEMENT ACTIONS

During this period over 120 preliminary and reconnaissance surveys were made. Approximately two-thirds of these indicated pollution subject to abatement under the act.

Raritan Bay (New Jersey-New York)

The conferees agreed that scientific data, taking into account a wide range of factors and technological problems, were urgently needed and were the critical issue in further control of the polluted waters. The PHS instituted an onsite project to secure this data. Another session of the conference will be held to evaluate progress of the investigation. About 50 communities, 40 industries, 6 institutions and 3 Federal installations are involved.

North Platte River (Wyoming and Nebraska)

The conferees conducted an investigation on the river jointly with the State agencies, municipalities and industries, during the 1961–62 sugarbeet campaign to obtain data needed to assess the effects of pollution from industrial and municipal sources of wastes. Upon completion of the investigation, a second session of the conference met and agreed on a remedial action schedule for sources of wastes in both States. The schedule is being implemented. In addition, a program for sampling, analyzing, and monitoring the effects of discharges from industrial sources was put in operation at the beginning of the 1962–63 sugarbeet campaign by the industries in cooperation with the two State agencies. When the report on this is received the accomplishments and effectiveness of the remedial measures taken will be evaluated.

Puget Sound and Upper Columbia River and their tributaries (Washington)

The major sources of pollution in the Puget Sound are seven pulp and paper plants which were operating under temporary permits issued by the State water pollution control agency. These permits contained specific recommendations for remedial action and an alternative in the nature of counterproposals. The conferees adopted the schedules in the permits. Additional scientific and technical data were needed to assess the effectiveness of the permits schedules and the effects of pollution from other municipal and industrial sources. The PHS and the State commission have jointly undertaken the necessary investigation. A second session of the conference on the upper Columbia River will be held in the near future.

Mississippi River (Clinton, Iowa, area) Iowa-Illinois

The conferees adopted the schedules of remedial action issued by the Iowa water pollution control agency in orders sent to 10 communities and industries. That agency agreed to prepare a commensurate program for all other Iowa industries and municipalities in the area by October 1, 1962. The Illinois water pollution control agency agreed to prepare a commensurate program for industries on the Illinois side of the river. The orders are being implemented and some progress has been made to control pollution from other cities and towns on the Iowa and Illinois side of the river.

Detroit River (Michigan)

The conferees agreed it was too early, on the basis of the record of the conference, to make an adequate judgment of the measures taken toward abatement of the pollution. DHEW, in order to close gaps in knowledge as to sources of pollution, nature and effects thereof, appropriate methods of abatement, and appropriate methods to avoid delays in abatement, initiated an investigation and study to gather data and information on the waters involved. This investigation and study is being carried on in close cooperation with the State agencies concerned, with details of the investigation being determined by the technical staffs of the DHEW, Michigan Health Department, and the Michigan Water Resources Commission. Work of the investigation is well advanced.

Androscoggin River (New Hampshire-Maine)

Still pending.

Escambia River (Alabama-Florida)

No pollution subject to abatement under the act is occurring. The State agency agreed to keep area under surveillance and advise DHEW of any changes.

SURVEILLANCE

Monitoring of progress has been continued in the other 13 cases to assure compliance for schedules of remedial action established and other work agreed upon.

FEDERAL INSTALLATIONS

The Federal Water Pollution Control Act directed all Federal departments and agencies to cooperate with the Department of Health, Education, and Welfare, with the State and local governments, and with interstate agencies in controlling pollution from their installations. On December 14, 1962, the President directed the Secretary to work with the officials of the executive branch with a view to correcting deficiencies in treatment of waste water from their installations. The Department program has been accelerated to coordinate and implement the requirements of this act and this directive.

GRANTS TO STATES

Mr. FOGARTY. Now, you are allocating $4,700,000 to the States for control activities. You estimate the same for next year. Are these funds required to be matched by the States?

Mr. McCALLUM. Yes, sir.

Mr. FOGARTY. In what way?

Mr. McCALLUM. On a variable formula basis which involves per capita income, population, and the extent of the water pollution problem. The extent of the water pollution problem is considered in each State on the basis of population density, and "wet" industries.

Mr. FOGARTY. What do you call "wet" industries?

Mr. McCALLUM. Waste-producing industries such as tanneries, pulp-paper, food, and metal processing.

Mr. FOGARTY. Do you have in total what the States have put into this program from their own funds for the last 2 years? Will you supply that for the record?

Mr. McCALLUM. Yes, sir.

(The material follows:)

Expenditures of State and interstate water pollution control agencies,[1] fiscal years 1961 and 1962,[2] and budgets for fiscal year 1963,[2] by source of funds

STATES

	1961			1962			1963		
	Total	Federal water pollution control grant	All other	Total	Federal water pollution control grant	All other	Total	Federal water pollution control grant	All other
Total	$10, 247, 984	$2, 641, 896	$7, 606, 088	$12, 424, 821	$4, 261, 867	$8, 162, 954	$14, 682, 924	$4, 302, 872	$10, 380, 052
Alabama	93, 379	57, 010	36, 369	152, 527	96, 864	55, 663	96, 711	44, 476	52, 235
Alaska	31, 541	13, 920	17, 621	34, 742	14, 100	20, 642	42, 525	15, 000	27, 525
Arizona	54, 272	23, 950	30, 322	67, 136	35, 872	31, 264	72, 239	35, 872	36, 367
Arkansas	107, 388	39, 201	68, 187	143, 829	63, 267	80, 562	177, 078	62, 300	114, 778
California	1, 019, 357	137, 560	881, 797	1, 130, 479	267, 746	862, 733	1, 214, 178	255, 044	959, 134
Colorado	297, 169	28, 965	268, 204	323, 132	44, 245	278, 887	361, 118	42, 800	318, 318
Connecticut	127, 674	42, 558	85, 116	150, 647	50, 678	99, 969	210, 397	70, 772	139, 625
Delaware	91, 663	30, 296	61, 367	153, 550	47, 863	105, 687	151, 739	45, 300	106, 439
District of Columbia	91, 359	25, 075	66, 284	107, 835	26, 957	80, 878	107, 250	35, 750	71, 500
Florida	506, 000	63, 048	442, 952	624, 000	107, 200	516, 800	695, 000	120, 000	575, 000
Georgia	284, 321	62, 675	221, 646	235, 501	108, 856	126, 645	296, 510	109, 200	187, 310
Hawaii	82, 748	26, 202	56, 546	97, 919	35, 665	62, 254	112, 976	34, 500	78, 476
Idaho	72, 799	19, 754	53, 045	82, 224	26, 258	55, 966	84, 931	26, 300	58, 631
Illinois	409, 739	97, 633	312, 106	370, 788	144, 039	226, 749	447, 119	146, 150	300, 969
Indiana	188, 216	66, 631	121, 585	241, 887	111, 544	130, 343	268, 787	115, 100	153, 687
Iowa	126, 535	45, 137	81, 398	115, 035	57, 260	57, 775	146, 851	70, 310	76, 541
Kansas	147, 360	34, 902	112, 458	184, 618	54, 480	130, 138	144, 757	54, 400	90, 357
Kentucky	143, 495	55, 679	87, 816	164, 727	87, 870	76, 857	204, 983	89, 600	115, 383
Louisiana	140, 184	52, 199	87, 985	170, 833	89, 318	81, 515	174, 872	91, 700	83, 172
Maine	141, 599	25, 485	116, 114	134, 677	36, 699	97, 978	171, 336	36, 800	134, 536
Maryland	174, 733	52, 097	122, 636	249, 513	89, 111	160, 402	324, 000	87, 600	236, 400
Massachusetts	175, 608	75, 740	99, 868	318, 225	135, 217	183, 008	460, 931	134, 000	326, 931
Michigan	261, 076	99, 281	161, 795	397, 024	171, 192	225, 832	427, 741	177, 000	250, 741
Minnesota	160, 287	49, 845	110, 442	159, 323	82, 081	77, 242	217, 704	83, 000	134, 704
Mississippi	122, 875	50, 558	72, 317	159, 761	80, 849	78, 912	169, 124	82, 337	86, 787
Missouri	138, 486	57, 521	80, 965	84, 100	43, 295	40, 805	184, 632	78, 128	106, 504
Montana	49, 403	18, 935	30, 468	58, 167	24, 190	33, 977	60, 231	18, 100	42, 131
Nebraska	39, 996	22, 889	17, 107	45, 633	26, 578	19, 055	57, 950	31, 032	26, 918
Nevada	38, 435	10, 320	28, 115	40, 811	10, 350	30, 461	39, 500	12, 976	26, 524
New Hampshire	86, 008	24, 257	61, 751	106, 932	33, 287	73, 645	133, 445	34, 600	98, 845
New Jersey	227, 224	80, 704	146, 520	396, 998	145, 141	251, 857	437, 426	145, 900	291, 526
New Mexico	83, 416	21, 187	62, 229	87, 109	30, 186	56, 923	110, 228	30, 900	79, 328
New York	1, 146, 008	169, 801	976, 207	1, 269, 162	306, 925	962, 237	1, 718, 591	307, 900	1, 410, 691
North Carolina	260, 527	77, 070	183, 457	313, 271	132, 529	180, 742	347, 742	131, 600	216, 142
North Dakota	35, 415	19, 856	15, 559	44, 604	26, 361	18, 243	41, 030	25, 800	15, 230
Ohio	362, 544	100, 871	261, 673	827, 256	207, 787	619, 469	1, 403, 203	212, 300	1, 190, 903

Oklahoma	62,787	35,359	27,428	86,354	51,026	35,328	110,848	62,400	48,448
Oregon	125,409	31,515	93,894	168,413	46,106	122,307	149,398	45,800	103,598
Pennsylvania	1,027,329	133,978	893,351	925,837	239,835	686,002	990,027	239,835	750,192
Rhode Island	89,106	37,563	51,543	106,013	51,002	55,011	143,659	58,500	85,159
South Carolina	138,532	51,687	86,845	160,051	81,771	78,280	145,444	82,600	62,844
South Dakota	42,466	20,470	21,996	44,573	27,291	17,282	45,293	26,900	18,393
Tennessee	140,647	61,001	79,646	188,128	103,377	84,751	187,029	104,290	82,739
Texas	215,021	107,413	107,608	437,339	192,206	245,133	497,978	196,500	301,478
Utah	69,242	22,108	47,134	72,617	20,153	52,464	62,497	21,300	41,197
Vermont	89,071	19,651	69,420	86,035	25,948	60,087	92,012	26,300	65,712
Virginia	188,335	60,285	128,050	238,387	97,898	140,489	230,850	101,800	129,050
Washington	224,905	40,122	184,783	233,575	63,784	169,791	253,355	61,700	191,655
West Virginia	100,336	40,019	60,317	119,296	58,822	60,474	191,810	60,100	131,710
Wisconsin	119,344	62,127	57,217	203,951	97,400	106,551	209,714	102,600	107,114
Wyoming	53,727	15,250	38,477	55,975	17,988	37,987	58,175	17,700	40,475
Guam	-----	-----	-----	9,600	6,400	3,200	(3)	(3)	(3)
Puerto Rico	31,188	20,600	10,588	44,702	29,000	15,702	(3)	(3)	(3)
Virgin Islands	11,700	3,936	7,764	(3)	(3)	(3)	(3)	(3)	(3)

INTERSTATE AGENCIES

Total	$661,626	$243,825	$417,801	$586,862	$251,013	$335,849	$584,413	$221,056	$363,357
Interstate Sanitation Commission	154,516	57,140	97,376	161,694	60,277	101,417	167,000	62,475	104,525
Interstate Commission on Delaware River Basin	91,559	37,207	54,352	103,962	42,905	61,057	59,000	24,309	34,691
Ohio River Valley Water Sanitation Commission	317,131	107,645	209,486	234,790	107,816	126,974	253,100	97,100	156,000
New England Interstate Water Pollution Control Commission	31,728	12,602	19,126	32,530	12,950	19,580	35,097	13,972	21,125
Klamath River Compact Commission	7,540	2,943	4,597	-----	-----	-----	-----	-----	-----
Interstate Commission on the Potomac River Basin	59,152	26,288	32,864	53,886	27,065	26,821	70,216	23,200	47,016

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[1] Exclusive of State grants to municipalities for waste treatment works construction.

[2] 1962 and 1963 data provisional.

ALLOCATION TO DISTRICT OF COLUMBIA

Mr. Fogarty. I notice the District of Columbia gets more funds from this appropriation than 18 States. Some of them are pretty big like Alaska, Colorado, and Montana. Is this another subsidy to the District?

Mr. McCallum. Since the matching provision under this program are variable, based on the per capita income this type of relationship can exist. The District has a water pollution program and a water pollution problem, and I might mention that we have an enforcement case also involved in this area.

Mr. Fogarty. How much does the District put up for the same purpose?

Mr. McCallum. I think the Federal share is one-third and the District share two-thirds. I would have to check that.

DEMONSTRATION GRANT PROGRAM

Mr. Fogarty. You started the demonstration grant program in 1962. You are financing 14 in 1963 and 16 are budgeted for 1964. What are these? Give us a couple of examples.

Mr. McCallum. We have a number of good projects. Two State demonstrations—one in Tennessee and one in New Jersey—are investigating and analyzing the relation of pollution to fish kills. Frequent investigators are called in to find the causes of fish kills and it is too late. The evidence is gone. They may spend considerable time on the stream, with biologists, engineers, and so forth, but the conclusions will be indeterminate.

The official agencies in these States have certain theories of how to go about this and follow promptly certain leads which will relate fish kills to pollution, if this is the case.

We have a very important demonstration project in the State of Washington. The Civil Engineering Department of the University of Washington has a demonstration grant to study the quality of impounded water as influenced by site preparation. For example, assume an abandoned mining community were located where a dam would inundate the area, there is a problem as to whether to remove all timber, all the debris, completely from the reservoir site. This is very expensive. The construction agencies may be reluctant to do it. Water storage projects are growing in number as the need for impounded water increases. Heretofore little has been known quantitatively about the effect of the preparation of a reservoir site on the design and operation of a water supply. This demonstration is designed to compare laboratory and onsite field data on water quality. The University of Washington is working on some small watersheds to demonstrate really what needs to be done—what has to be done in the cleaning and preparation of a site to insure good quality water.

Mr. Fogarty. Tell us about the national water quality network.

Mr. McCallum. The national water quality network is designed to establish sampling stations on the Nation's major streams to determine trends in water quality; that is, whether we may be losing ground or gaining ground in the control of pollution. These data will tell us just what is happening to the quality of the Nation's waters. The need for these data has been brought out on many occasions.

In appearing before the Senate Public Works Committee we have been asked how many acres of water have been despoiled by this or that type of pollution for this or that type of use. This is a question we have not been able to answer—but we should be. We now have 125 of these stations. Our goal is 300. When we do have 300 stations and have had them in service for some time, we will be able to provide those answers.

GRANTS FOR WASTE TREATMENT WORKS CONSTRUCTION

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities: Grants for construction (costs—obligations) (object class 41)	65,499	96,000	106,000
Financing:			
Unobligated balance brought forward (−)	−7,608	−22,649	−16,649
Unobligated balance carried forward	22,649	16,649	10,649
Unobligated balance lapsing	105		
New obligational authority (appropriation)	80,645	90,000	100,000

Mr. FOGARTY. Who is going to justify grants for waste treatment works construction?

Mr. McCALLUM. I have that.

GENERAL STATEMENT

Mr. FOGARTY. All right, we will put your statement in the record at this point.

(The statement follows:)

Mr. Chairman and members of the committee, the Federal Water Pollution Control Act, as amended, authorizes grants to cities and other specified jurisdictions for the construction of necessary treatment works to prevent the discharge of untreated or inadequately treated wastes into any waters. The act authorizes the appropriation of $100 million for fiscal years 1964 through 1967.

Grants are made to the municipalities sponsoring such projects by the Department of Health, Education, and Welfare. The maximum grant to a single municipality is 30 percent of the cost of the project or $600,000 whichever is smaller. In the case of a multimunicipal project, the grant is based on each community's share of the project cost, under the 30-percent or $600,000 limitation, but the maximum grant for the overall project may not exceed $2.4 million. The 1961 amendments require reallocation of sums allotted to States, which, because of lack of projects approved by those States, are not obligated within 6 months following the end of the fiscal year for which allotted. However, when the need for an active project in such State is due in part to any Federal institution or Federal construction activity, an additional grant may be made to the project which will reflect an equitable contribution for the need caused by Federal activity. These additional grants are made from funds otherwise subject to reallocation. The funds remaining after such additional grants have been made are reallotted to States having projects approved for grants in excess of their original allotments.

This grant program has provided marked stimulus to construction of essential waste treatment works. Construction activity has more than doubled during the course of the program and construction contracts are now being awarded at an annual rate of $500 million. The conference of State sanitary engineers conducts annually a survey of sewage treatment needs of the individual States. The last completed survey showed that, as of December 31, 1961, more than 5,000 communities, having a population of 40 million, needed new waste treatment facilities or enlargement and additions to existing plants. The survey of 1962 needs by the conference is now being compiled.

From the enactment of the Federal Water Pollution Control Act in 1956 to January 1, 1963, an aggregation of 4,112 applications have been approved for grants totaling $354 million, thus aiding in construction of waste treatment works costing $2.2 billion. The States report an additional 1,701 grant requests requiring $190 million in Federal funds.

It is estimated that the $100 million requested for fiscal year 1964 will provide grants for 1,000 projects.

Mr. Chairman, I shall be glad to answer any questions the committee may wish to ask.

BUDGET REQUEST

Mr. Fogarty. The appropriation for 1963 is $90 million and the request for 1964 is $100 million, the maximum authorized to be appropriated.

We will place the justifications in the record. We will also place in the record the table you prepared at the committee's request showing the backlog of applications.

(The material follows:)

Justifications

GRANTS FOR WASTE TREATMENT WORKS CONSTRUCTION

The Federal Water Pollution Control Act, as amended by Public Law 87–88, authorizes appropriations of $90 million for fiscal year 1963 and $100 million annually for fiscal years 1964–67 to aid in the construction of municipal sewage treatment facilities. These funds are to be apportioned to the States and other jurisdictions according to a formula prescribed in the statute. Funds allotted to a State which are not obligated within 6 months following the end of the fiscal year for which appropriated are subject to reallotment to States having unmet needs. Before any funds are withdrawn from a State, however, additional grants may be made to communities in that State experiencing Federal impact. These additional grants are to reflect an equitable contribution to meet the need caused by Federal institutions or construction activities.

Since the enactment of the Federal Water Pollution Control Act of 1956, the stimulus provided by these grants has increased sharply the consrtuction of municipal waste-treatment facilities. During the pre-grant period of 1952–56, contract awards averaged $220 million annually. With other project costs, this represented a total average annual investment of $270 million. Under the 1956 act, construction activity increased 62 percent to an average annual contract award level of $360 million. With the additional financial assistance provided under the 1961 amendments to the Federal Water Pollution Control Act, contract awards for 1961 further increased 22 percent to $449 million, representing a total annual investment of $540 million. Contract awards for 1962 were expected to reach $500 million, for a total annual investment of about $600 million.

As of December 31, 1962, 4,112 grants totaling $354 million have been made for waste-treatment works projects costing $2.2 billion. The ratio of local to Federal dollars invested has been about 5 to 1. This construction in the aggregate will provide adequate treatment of wastes for a population of more than 40 million. Water quality in approximately 42,000 miles of the Nation's streams and in lake and ocean waters along many miles of shorelines will be substantially improved.

Grant requests known to be in preparation or under review as of December 31, 1962, numbered 1,701 and amounted to $190 million. State agencies have reported that approximately 5,000 communities need new sewage-treatment plants or enlargement or additions to existing facilities to serve an aggregate of 43 million people. The total cost of construction needed to meet these requirements is over $2 billion. To satisfy this need within a reasonable period of years, and to keep up with the new needs that will develop as the population grows and existing treatment works become obsolete, will require an average annual investment of $600 million.

An appropriation of $100 million will provide grants for approximately 1,000 projects and will provide the support necessary to maintain construction activity at the level required to abate pollution from municipal wastes.

Allocations of grant-in-aid funds for waste-treatment works construction

State or territory	1962 allocations	1963 allocations	Estimated 1964 allocations
Alabama	$1, 698, 520	$1, 905, 615	$2, 117, 500
Alaska	585, 560	656, 460	730, 500
Arizona	981, 800	1, 126, 035	1, 242, 450
Arkansas	1, 484, 520	1, 642, 680	1, 789, 450
California	3, 981, 840	4, 477, 410	4, 976, 200
Colorado	1, 038, 560	1, 138, 545	1, 255, 650
Connecticut	1, 035, 720	1, 183, 950	1, 325, 300
Delaware	559, 800	639, 450	717, 700
District of Columbia	634, 080	728, 055	801, 550
Florida	1, 785, 240	2, 027, 385	2, 268, 000
Georgia	1, 765, 320	1, 980, 045	2, 192, 000
Hawaii	796, 040	890, 640	954, 700
Idaho	919, 240	1, 037, 025	1, 178, 600
Illinois	2, 739, 760	3, 105, 180	3, 450, 800
Indiana	1, 673, 480	1, 897, 065	2, 102, 750
Iowa	1, 302, 800	1, 471, 950	1, 631, 150
Kansas	1, 167, 480	1, 309, 410	1, 461, 650
Kentucky	1, 575, 960	1, 784, 070	1, 977, 900
Louisiana	1, 572, 680	1, 781, 820	1, 998, 400
Maine	989, 320	1, 094, 040	1, 235, 700
Maryland	1, 269, 240	1, 436, 715	1, 593, 900
Massachusetts	1, 695, 760	1, 911, 510	2, 123, 850
Michigan	2, 320, 320	2, 627, 325	2, 932, 300
Minnesota	1, 442, 880	1, 624, 545	1, 799, 400
Mississippi	1, 720, 480	1, 907, 010	2, 102, 400
Missouri	1, 604, 160	1, 796, 220	1, 995, 100
Montana	822, 600	941, 040	1, 080, 150
Nebraska	993, 320	1, 117, 620	1, 235, 850
Nevada	571, 920	642, 060	702, 400
New Hampshire	827, 000	934, 785	1, 026, 900
New Jersey	1, 857, 200	2, 102, 175	2, 338, 600
New Mexico	969, 760	1, 105, 335	1, 243, 550
New York	4, 199, 480	4, 731, 930	5, 255, 250
North Carolina	1, 947, 400	2, 163, 960	2, 388, 850
North Dakota	993, 440	1, 089, 180	1, 267, 600
Ohio	2, 717, 720	3, 089, 250	3, 437, 850
Oklahoma	1, 287, 520	1, 442, 430	1, 609, 550
Oregon	1, 039, 200	1, 152, 585	1, 282, 900
Pennsylvania	3, 101, 520	3, 507, 255	3, 908, 250
Rhode Island	830, 400	938, 160	1, 046, 950
South Carolina	1, 576, 800	1, 759, 590	1, 945, 000
South Dakota	999, 760	1, 095, 570	1, 205, 150
Tennessee	1, 698, 000	1, 920, 555	2, 129, 250
Texas	2, 824, 320	3, 191, 355	3, 549, 900
Utah	940, 720	1, 062, 990	1, 169, 750
Vermont	867, 280	963, 990	1, 063, 900
Virginia	1, 629, 960	1, 852, 920	2, 051, 950
Washington	1, 232, 440	1, 399, 365	1, 553, 400
West Virginia	1, 232, 480	1, 412, 100	1, 580, 450
Wisconsin	1, 524, 440	1, 719, 000	1, 911, 050
Wyoming	712, 400	775, 080	877, 300
Guam	1, 255, 920	1, 384, 380	1, 521, 700
Puerto Rico	1, 758, 200	1, 949, 445	2, 149, 550
Virgin Islands	1, 248, 240	1, 375, 740	1, 512, 100
Total	80, 000, 000	90, 000, 000	100, 000, 000

Analysis of Backlog of Applications

Analyses of Federal funds available for waste treatment works construction in fiscal year 1964, estimated from informal State reports as of Jan. 15, 1963

[In thousands of dollars]

	Federal grants requested by applications on hand in State and DHEW regional offices (1)	Estimate of Federal grants requested by applications in preparation by municipalities (2)	Total, cols. 1 and 2 (3)	Unobligated Federal funds available for additional applications (4)	Estimated 1964 State allocations (5)	Total, cols. 4 and 5 (6)
Total	77,758	111,255	189,013	43,687	100,000	143,687
Alabama	445	2.776	3,221	215	2,117	2,332
Alaska	------------	116	116	655	730	1,385
Arizona	1,092	165	1,257	499	1,242	1,741
Arkansas	------------	2,377	2,377	2	1,789	1,791
California	5,866	------------	5,866	220	4,976	5,196
Colorado	104	3,647	3,751	877	1,256	2,133
Connecticut	1,466	3,085	4,551	1,003	1,325	2,328
Delaware	------------	172	172	558	718	1,276
District of Columbia	------------	3,558	3,558	145	802	947
Florida	1,453	------------	1,453	1,404	2,268	3,672
Georgia	1,367	1,103	2,470	1,380	2,192	3,572
Hawaii	------------	3,065	3,065	850	955	1,805
Idaho	186	1,035	1,221	1,157	1,179	2,336
Illinois	1,858	5,900	7,758	524	3,451	3,975
Indiana	2,757	424	3,181	88	2,103	2,191
Iowa	1,083	1,991	3,074	881	1,631	2,512
Kansas	------------	685	685	967	1,462	2,429
Kentucky	187	3,314	3,501	232	1,978	2,210
Louisiana	3,174	4,236	7,410	------------	1,998	1,998
Maine	641	1,167	1,808	988	1,236	2,224
Maryland	631	1,181	1,812	263	1,594	1,857
Massachusetts	3,307	4,604	7,911	1,174	2,124	3,298
Michigan	11,886	------------	11,886	511	2,932	3,443
Minnesota	2,344	------------	2,344	1,086	1,799	2,885
Mississippi	1,262	846	2,108	1,782	2,102	3,884
Missouri	7,779	------------	7,779	65	1,995	2,060
Montana	------------	358	358	790	1,080	1,870
Nebraska	131	1,195	1,326	559	1,236	1,795
Nevada	------------	538	538	515	702	1,217
New Hampshire	539	5,976	6,515	979	1,027	2,006
New Jersey	1,377	2,713	4,090	355	2,339	2,694
New Mexico	69	707	776	566	1,244	1,810
New York	4,561	8,328	12,889	2,318	5,255	7,573
North Carolina	2,631	9,717	12,348	114	2,389	2,503
North Dakota	------------	464	464	2,020	1,268	3,288
Ohio	2,033	1,845	3,878	795	3,438	4,233
Oklahoma	1,748	1,239	2,987	------------	1,610	1,610
Oregon	2,417	478	2,895	203	1,283	1,486
Pennsylvania	3,308	5,402	8,710	430	3,908	4,338
Rhode Island	135	1,515	1,650	138	1,047	1,185
South Carolina	56	1,430	1,486	1,474	1,945	3,419
South Dakota	------------	114	114	1,293	1,205	2,498
Tennessee	2,561	2,522	5,083	816	2,129	2.945
Texas	2,080	6,562	8,642	4	3,550	3,554
Utah	394	1,309	1,703	777	1,170	1,947
Vermont	486	2,142	2,628	779	1,064	1,843
Virginia	496	4,957	5,453	753	2,052	2,805
Washington	824	960	1,784	1,035	1,553	2,588
West Virginia	707	5.018	5,725	430	1,580	2,010
Wisconsin	2,317	------------	2,317	164	1.911	2,075
Wyoming	------------	214	214	1,324	877	2,201
Puerto Rico	------------	105	105	2,266	2,150	4,416
Virgin Islands	------------	------------	------------	2,624	1,512	4,136
Guam	------------	------------	------------	2,640	1,522	4,162

FUNDS REQUIRED TO FINANCE ALL APPROVABLE APPLICATIONS

Mr. FOGARTY. What would this appropriation be if we were governed only by the approvable applications for projects for which matching funds are available?

Mr. MCCALLUM. We have now applications in the States and in the regional offices which would require $189 million in Federal funds.

Mr. FOGARTY. Do you have any estimate about how many you would have in 1964?

Mr. PILZYS. Mr. Chairman, based on the applications currently available for approval or to be approved, we would have unfunded applications on hand as of June 30, 1964, worth $45 million.

Mr. FOGARTY. I thought it would be more than that.

Mr. KELLY. It will be. These mentioned are those now on hand.

Mr. FOGARTY. By the end of 1964, how many applications do you expect to have on file that you will not be able to fund?

Mr. MCCALLUM. Presumably it would be more than that, because there will be more coming in, based on previous experience.

Mr. KELLY. Let us give you an insert on that, to provide that.

Mr. FOGARTY. All right.

(The information follows:)

ESTIMATE OF UNFUNDED APPLICATIONS FOR CONSTRUCTION GRANTS AS OF JUNE 30, 1964

The current list of pending applications will be under constant change throughout fiscal year 1964, with deletions because of grant approvals and dropouts, and additions from the development of new projects. However, based on experience, there will be on hand approximately $140 million in pending applications at the end of 1964.

Mr. FOGARTY. At the rate we are now proceeding, when do you think we will catch up with the need for waste treatment works?

Mr. MCCALLUM. Last year for the first time we got up to contract awards of $500 million a year. We and the States have agreed that to take care of the backlog and begin to catch up, the country must spend about $600 million a year on municipal waste treatment construction.

Mr. FOGARTY. All right.

Mr. MCCALLUM. Presumably it would be more than that, because this rate to have the problem well in hand.

Mr. FOGARTY. Thank you very much, Mr. McCallum.

ENVIRONMENTAL HEALTH PROGRAMS

Dr. Anderson, I have a few questions about the Bureau of State Services Management Fund, but before we go on to that we will place these two statements, relating to the overall environmental health program, in the record.

(The statements follow:)

ANALYSIS OF RESEARCH GRANTS

Environmental health programs: Analysis of research grants

[In thousands of dollars]

1964 estimate	Environmental health sciences	Air pollution	Milk, food, interstate, and community sanitation	Occupational health	Radiological health	Water supply and water pollution control	Total
1. Continuations and supplementals	----------	2,617	3,551	1,598	1,380	2,864	12.010
2. Number	----------	(113)	(181)	(51)	(66)	(159)	(570)
3. New projects (including carryover from 1963)	1,541	1,093	1,260	507	737	1,189	6,327
4. Number	(20)	(49)	(57)	(15)	(34)	(58)	(233)
5. Additional indirect costs:							
(*a*) To 20 percent	67	141	209	92	92	176	777
(*b*) To 25 percent	22	44	70	31	31	59	257
6. Total possible projects (1964 budget)	1,630	3,895	5.090	2.228	2,240	4,288	19,371
7. Number	(20)	(162)	(238)	(66)	(100)	(217)	(803)
8. Estimated approved projects not financed	2.370	1,863	2,217	1,359	2.498	1,883	12,190
9. Number	(30)	(62)	(95)	(35)	(102)	(81)	(405)
10. Total estimated approved projects	4,000	5,758	7,307	3.587	4.738	6,171	31,561
11. Number	(50)	(224)	(333)	(101)	(202)	(298)	(1,208)

HIGHLIGHTS OF PROGRESS IN ENVIRONMENTAL HEALTH

AIR POLLUTION

Highlights of progress on the air pollution problem during 1962 include the following:

Motor vehicles, air pollution, and health.—A report titled "Motor Vehicles, Air Pollution, and Health" was presented to the Congress on June 7, 1962, in compliance with Public Law 86–493 passed 2 years earlier. The report was the product of 2 years' intensive study of motor vehicle exhausts and their effect on human health.

National Conference on Air Pollution.—A National Conference on Air Pollution was held in Washington, D.C., December 10–12, 1962. Over 1,400 attended the conference including health officials, engineers, physicians, scientists, legislators, industry spokesmen, and representatives of labor and civic organizations.

Establishment of animal colonies in Los Angeles.—Animal colonies were established in the Los Angeles area for study of the biological effects of ambient Los Angeles air in comparison with control groups in filtered air environment.

Changes in pulmonary function.—It was found that the inhalation by experimental animals of auto exhaust atmospheres typical of Los Angeles air produced changes in pulmonary function in such a way that air way resistance of the lungs was increased and tidal volume and respiratory rate were affected.

Increased susceptibility to pneumonia.—Mice exposed to nitrogen dioxide well below the levels considered safe for industrial exposures showed increased susceptibility to pneumonia with a doubling of the mortality rate.

Carboxyhemoglobin concentration.—It was found that the inhalation of carbon monoxide with ozone or nitric oxide produced greater concentrations of carboxyhemoglobin in blood than would result from exposure to carbon monoxide alone.

Changes in normal activity.—Exposure to auto exhaust and its various components altered the normal spontaneous activity of mice.

Air pollution asthma in New Orleans.—In a study of episodes of increased admissions to Charity Hospital, New Orleans, for attacks of asthma, the causative agent was found to be a poor combustion product in association with silica. A burning city dump was found to be a source of this poor combustion product.

Air pollution morbidity and mortality.—A retrospective study by Dr. Leonard Greenburg, of Albert Einstein College of Medicine, shows that a period of high air pollution in New York City in November 1953 was related to increased mortality and that clinic visits for upper respiratory infections and for cardiac illness were increased in number during the episode.

Chlorine release study.—A project was started which will evaluate lung function and possible residual lung damage in a group of men accidentally exposed to high chlorine gas concentration March 28, 1961.

Effects of air pollution upon chronic respiratory disease.—Under a contract with the University of Southern California, a study is being made of the effects of air pollution upon the respiratory tract of patients with chronic respiratory diseases, such as obstructive emphysema, bronchiectasis, and pulmonary fibrosis.

Sources of polynuclear hydrocarbons in the atmosphere.—A large number of sources were evaluated for emission of polynuclear hydrocarbons and other pollutants. Many types of polynuclear hydrocarbons are carcinogenic and have been found in urban atmosphere. Results indicate that coal burning in home heating units is the major source of polynuclear hydrocarbons in urban areas where coal is still used for home heating. The automobile is the next most important source of these compounds.

Continuous air monitoring project.—Six comprehensive air sampling stations were activated for continuous analyses of the major gaseous air pollutants. The stations, located in Chicago, Cincinnati, New Orleans, Philadelphia, San Francisco, and Washington, were constructed on downtown sites to house a battery of sample analyzers designed particularly for air pollution monitoring. The instruments will provide data necessary to accurately assess air pollution levels in major urban areas.

Direct measurement of air movement.—A technique has been developed that will allow, for the first time. the direct measurement of air movement over 20-mile distances. The technique utilizes radar tracking of constant volume balloons equipped to generate an identifying signal upon command. This development helps make possible the study of intracity transport of air pollution.

Air pollution potential forecast.—The air pollution potential forecasting service provided by Weather Bureau personnel located at the Robert A. Taft Sanitary Engineering Center was made national in scope by including the area west of the Rocky Mountains in an experimental forecast verification program. Forecasts of air stagnation periods for the area east of the Rocky Mountains are issued daily and are available for nearly all cities in the country through local U.S. Weather Bureau offices.

Cooperative Public Health Service-Edison Electric Institute studies.—A study of plumes from large powerplants was started in cooperation with Edison Electric Institute, an organization representing over 100 major electric power generating companies in the United States. The study is concerned with the quantitative measure of the effects of powerplant emissions on visibility.

National levels of air pollution.—The most comprehensive report of national air quality ever produced was recently published. The report, "Air Pollution Measurements of the National Air Sampling Network, 1957–61," details the concentration and composition of particulates in the atmospheres of 190 American cities and in 50 nonurban sites.

Role of aromatic hydrocarbons in photochemical smog.—Irradiation studies of auto exhaust and pure component mixtures have defined for the first time the important role played by aromatic hydrocarbons in eye irritation, plant damage, and visibility reduction. Previously olefins were the only hydrocarbons emphasized in irradiation studies of photochemical smog.

Chicago program assistance.—A memorandum of agreement between the city of Chicago Department of Air Pollution Control and the Public Health Service for 5-year technical program was developed and concluded.

St. Louis study.—At the request of and in cooperation with East St. Louis, Ill., and the city of St. Louis, a comprehensive regional interstate air resource study was developed and an agreement reached for joint participation by the States of Missouri and Illinois, as well as by St. Louis County Health Department, Eastside Health District, and the Bistate Agency.

Lewiston-Clarkston air quality study.—An interstate study involving Idaho and Washington was completed. A report of the findings is in preparation. The total study permitted the development and evaluation of methodology for the solution of interstate air pollution problems, and the assessment of improved tools to gage the extent and intensity of air pollution in two adjacent communities.

Short-term studies.—Short-term air quality studies were completed and reports issued for Birmingham, Ala., Richmond, Va., Providence, R.I., Spartanburg, S.C., and Washington, D.C.

Statewide surveys.—Statewide surveys were made in South Dakota and Kansas. A similar survey was started in Oklahoma. Reports were issued for South Dakota, Pennsylvania, and Georgia.

Training activities.—Twenty-five intensive short-term training courses were given to a total of 293 individuals. Three 1-day orientation courses were given in three cities in the United States with a total enrollment of 571 persons.

London smog episode.—Dr. Richard A. Prindle, Deputy Chief, Division of Air Pollution, flew to London on December 6, 1962, to observe a severe air pollution episode which took a heavy toll in human life, and resulted in an economic loss estimated at $55 million. Discussions were held with British authorities relative to postattack studies and arrangements were made to inform the Public Health Service of the findings.

MILK, FOOD, INTERSTATE, AND COMMUNITY SANITATION

Research grants

New research grants have included projects in areas not previously covered by the grant program. One project has the objective of developing methods for detection of virus contamination in foods. Another new study is directed toward definition of interrelationships between urban development and provision of environmental engineering services and facilities. A third project in a new area is a study of the application of modern computer techniques to the problems of solid waste engineering in complex metropolitan areas.

Investigations supported through research grants are providing considerable useful information. A group at Cornell studying the problem of antibiotic contamination of milk, reports significant declines in the amounts of antibiotics present in milks surveyed. They also found that persistence of antibiotic in the udder beyond 72 hours is the principal cause for such residues as do appear. Investigators at the University of Washington report considerable variance among different species of shellfish with regard to the development of paralytic shellfish toxin. This finding, as well as basic oceanographic factors, is being actively studied to define their significance in this important problem.

During the past year an international symposium on food protection was supported in part by a grant to the University of Iowa. Leading investigators from both this country and abroad discussed the subject from the standpoints of both chemical and biological hazards in foods. The proceedings have been widely distributed to workers in these fields.

Special engineering services

In cooperation with the Joint Committee on Rural Sanitation, the Special Engineering Services Branch issued a "Manual of Individual Water Supply Systems." Designed as a guide for persons who are unable to obtain water from municipal systems, the manual provides basic information on the design, operation, and maintenance of small water systems for farms, rural homes, institutions, recreation areas, and public acccommodations as motels, mobile home parks, camps, and parks.

New technical information will also include supplement E (1960–61) to the "Refuse Collection and Disposal," an annotated bibliography of technical publications in the solid waste field. Strong interest and acceptance of proposed "Recommended Standards for Sanitary Landfill Operations" has been received from local public health and public works personnel concerned with solid wastes disposal problems. This document was developed jointly by personnel of the Division of Environmental Engineering and Food Protection and of the Communicable Disease Center.

An "Administrative Guide Covering Public Health Problems in Recreational Areas" was developed in cooperation with the Columbia Interagency Committee and the Pacific Southwest Interagency Committee on Water Pollution, printed in quantity and distributed widely. This has proved to be a very useful guide to agencies in recreation area management.

Interstate carrier sanitation

During 1962, emphasis was given to the training of railroad dining car supervisors and other personnel who are responsible for food service aboard carriers. One course was attended by 81 dining car supervisors representing 31 railroads and the Pullman Co. The regional offices conducted seven similar course-seminars for food service personnel from the air and rail carrier lines.

The drinking water supply activity was highlighted by the publication of the "1962 Public Health Service Drinking Water Standards." Legally applicable under Federal regulations to over 850 interstate carrier water supplies, the new standards were also endorsed by the American Water Works Association and the Conference of State Sanitary Engineers as the standards to be used in assessing the quality generally of all U.S. water supplies, which number over 20,000.

The water supply activity, anticipating disease outbreaks from cross connections, prepared a manual "Water Supply-Plumbing Cross Connections." It is estimated that more cases of communicable diseases are caused through cross connections than by most other environmental causes combined. An example of the impact of this was evidenced by an outbreak of 700 cases of waterborne gastroenteritis caused through a cross connection between potable water and polluted harbor water in a vital defense shipyard in Camden, N.J.

A survey was begun of the effect on the quality of three public water supplies in the Northeast of widespread use on the watersheds of agricultural insecticides and herbicides. To date three chemical agents, DDT, parathion, and diazanone have been recovered from extracts obtained from these public water supplies.

Joint surveys of interstate carrier water supplies were continued by regional water supply consultants in cooperation with State health department engineers. As a result of this work over $1 million of improvements were made or contracted for in 1962.

Environmental health planning for metropolitan areas

Conferences, seminars, and training programs have been conducted in 14 States demonstrating a method that can be employed in assessing the present health needs and planning to provide a more healthful future environment.

Environmental health studies are proceeding in Seattle, Wash., Springfield, Mo., and Morristown, Tenn. These studies will provide a guide so that these communities can plan for their future growth in an economical and logical manner.

Considerable interest is still evidenced in the "Environmental Health Planning Guide" by State and community agencies and private individuals. Distribution of this publication now exceeds 3,000 copies and is available in all but a few States.

Food sanitation

In May 1962, the new "Food Service Sanitation Manual" was published. This has prompted a resurgence of interest in updating State and local food service sanitation programs. Current activity in this area is directed toward expediting the early use of the new manual by conducting series of seminars for State and local official agency personnel. A total of 31 such seminars were conducted in 1962. A significant supplemental development related to the manual is the comprehensive programs evaluation procedure designed to State and local use which is currently in a working draft stage. Also a formal protocol for cooperative State-PHS projects to demonstrate the field application of technical and administrative provisions of the manual has been developed, and preliminary negotiations for such projects have been initiated.

During 1962, a rapid serological method for the detection of staphylococcal enterotoxin in food, and an improved medium for the enumeration of coagulase-positive staphylococci in food were developed. Both these developments will be of value to public health authorities in the investigation and prevention of foodborne disease outbreaks.

The staff conducted or participated in the conduct of 50 training courses and seminars on food sanitation attended by over 2,600 persons from State and local health agencies, and industry. Participation with health agencies and industry in the revision or development of nine standards covering the sanitary design and construction of food service equipment, vending machines, and baking equipment was also accomplished.

Milk sanitation

The January 1, 1963, list of certified interstate milk shippers includes the names and milk sanitation ratings of 890 shippers located in 42 States and the District of Columbia—more than a fivefold increase in the number of shippers in 10 years. Approximately 10 billion pounds of milk, valued at nearly $500 million, moved in interstate commerce under this program last year.

During 1962, 200 check ratings in 31 States were made in order to validate the sanitation compliance ratings submitted by the States. The division also standardized and certified 43 State milk sanitation rating officers located in 22 States, certified 15 health and agriculture laboratories in 13 States, and evaluated 10 comprehensive State programs.

Studies on the development of a suitable immunological test for enterotoxin A have resulted in an antiserum which appears satisfactory for the identification and quantitation of this toxin. Currently, 160 cultures of coagulase-positive *S. aureus* isolated from dairy products are being examined for the ability to produce enterotoxin A and B. These data will be the first available on the incidence of enterotoxigenic staphylococci in dairy products at the consumer level, where at the same time such products have not been reportedly associated with an outbreak.

In cooperation with States, industry, and national health organizations, the Division participated in the development of five standards covering the sanitary design and construction of dairy equipment. In addition, 106 milk equipment reviews were made in order to determine compliance with the applicable requirements of the PHS Milk Ordinance and Code.

In 1962, 49 training courses and seminars on milk sanitation were conducted and were attended by 2,663 persons from State and local agencies, and industry.

Shellfish sanitation

As of January 15, 1963, a total of 1,439 interstate shellfish shippers in the United States, Canada, and Japan had been certified to the Surgeon General as complying with the agreed-upon standards. The control program of each shellfish-producing State was reviewed with the responsible State officials during the 1962 harvesting season. An average program rating of 82.4 percent was attained. Visits were also made to production areas in British Columbia, Quebec, and New Brunswick in cooperation with Canadian authorities.

In October, an international agreement was concluded between the United States and Japan providing for the use of uniform shellfish sanitation standards, joint inspection, and mutual acceptance of products. The Government of Japan has since certified a Hiroshima packer as producing a product equivalent in quality to domestically produced oysters. Other nations, including western Samoa, Korea, Venezuela, Australia, and Mexico, have evidenced an interest in marketing their shellfish in the United States.

Shellfish sanitation staff members cooperated with the Communicable Disease Center and the Connecticut State Department of Public Health in an investigation of 15 cases of infectious hepatitis attributed to clams harvested from a sewage-polluted area. The clams were harvested as "fish bait," but were used as food.

Four outbreaks of paralytic shellfish poisoning involving 39 persons were reported from Alaska and California. Staff scientists assisted California in the institution of a more effective program for the bioassay of oysters for the toxin.

In Florida, an undetermined number of persons were made ill by a previously unknown toxic material in oysters and clams. Shellfish sanitation staff cooperated with the Communicable Disease Center and the Florida State Department of Health in an epidemiological study and establishment of a system for the bioassay of shellfish for the toxin. Immediate steps were taken to bioassay oysters from other production areas on the Gulf of Mexico; however, the poison was found in only two of the counties originally implicated.

An analytical chemical procedure based on use of gas chromophotography for detecting herbicide and chlorinated hydrocarbon insecticide residues in shellfish was developed. Preliminary studies using this new procedure have demonstrated the presence of the herbicide 2-4-D and the insecticides DDT and DDE in oysters and clams from selected test areas.

Studies on the chemistry of paralytic shellfish poison have been focused on the development of an immunological reaction to the poison molecule. Limited initial success in immunizing laboratory animals against the action of the poison was achieved. A project was initiated for extracting several grams of purified poison from several tons of highly toxic Alaskan clams.

An investigation has been continued on the presence of unusually high concentrations of zinc and copper in oysters in localized areas.

Studies on artificial depuration shellfish techniques have been continued at the Purdy, Wash., laboratory. Field visits were made to depuration plants in the United Kingdom, France, Spain, and Portugal. Discussions have been initiated in Maine, Massachusetts, and Rhode Island for joint study of depuration techniques in these areas.

The 1962 appropriation authorized funds to construct two shellfish sanitation research centers. Sites were selected and acquired at no cost to the Government at Dauphin Island, Ala., and Kingston, R.I. Architectural plans were completed and construction contracts awarded with construction to begin and be completed in 1963. These research centers will be engaged in shellfish sanitation studies in four technical areas: microbiological, including viral; marine toxin; chemical; and radiological.

OCCUPATIONAL HEALTH

Coal mine study.—Equipment and personnel were assembled for a study of chest diseases in bituminous coal miners, scheduled to start in southern West Virginia in January 1963. Made possible by a congressional increase in the 1963 appropriation, the study seeks to determine the extent to which chronic pulmonary disease is a problem among coal workers, its underlying causes, its relationship to the working and living environment of the miners, the course of the disease, and its social impact.

Metal mine study.—Findings of a 3-year metal mine study, conducted at the request of Congress by the Division of Occupational Health of the Public Health Service, and the U.S. Bureau of Mines, have been analyzed, and a report is in preparation. The study included 67 mining companies and detailed physical examinations of 14,959 miners. Review of all available evidence suggests that the medical and engineering controls adopted by the metal mining industry have proved to be effective in the control of silicosis. This disease of the lungs caused by silica dust was found to be largely confined to older miners with more than 25 years of experience in the metal mines, whose exposure dates back to the precontrol era.

Uranium mine study.—Mounting evidence is developing in the course of a long-term study, begun in 1950, pointing to a lung cancer hazard in the mining of uranium. The Division of Occupational Health is continuing its surveillance of uranium miners with periodic followups of their health status. The Division is also assisting the Colorado Plateau States, site of the mining operations, in reducing radiation levels and in supporting cooperative activities directed at the early diagnosis of lung cancer.

Heat study.—Heat stress evaluations were made in a sodium plant and a glass company as part of a new 5-year study of the effects of heat and cold in work environments. To facilitate this study, a chamber was designed for controlled research on the physiological and psychological impact of temperature, humidity, radiation, and air movement in combinations typically encountered in industrial situations.

Noise studies.—Several facets of the noise problem have been under investigation. One study has sought to determine hearing loss produced by continuous versus impulse industrial noises, and the extent to which it can be offset by protective devices. Another study has dealt with the effects of excessive noise on the learning and performance of a complicated task. Specific problems of aircraft noise were studied at the Miami and Los Angeles International Airports and recommendations made for the control of harmful occupational exposures.

Feed mill study.—In view of the increasing use of a wide variety of additives in feeds, a pilot occupational health study was undertaken to determine any effects on workers handling animal feeds.

Evaluation of international standards.—The Division of Occupational Health arranged for a joint review by various countries of the 1958 standards of the International Labor Organization, used to classify X-ray findings for dust diseases of the lungs. This meeting is expected to result in a more uniform evaluation of these X-rays, contributing to comparability of findings among various countries and the broader application of research data.

Laboratory research.—Various studies were conducted to evaluate the toxicity of industrial substances and to determine how toxic agents work. Substances studied included oil mists, nitrogen dioxide, intermetallic compounds, and a new type of beryllium ore. Work also continued on "biochemical profile" studies, designed to determine early effects of exposure to various chemicals through detection of changes in tissue and blood enzymes and other substances.

Training.—As part of its program to offer short-term training courses not given elsewhere, the Division last year presented 16 separate courses, attended by 196 students. In addition to basic courses on industrial hygiene engineering and chemistry, four special technical courses were given on ion exchange techniques for fluoride and mercury, heat stress and its control, solvent analysis techniques, and air sampling and evaluation. Special workshops and courses were also held for local health officers, occupational health nurses, and sanitarians.

Consultative and technical assistance.—During the year, field consultations and technical services were provided on over 300 different occasions in 50 States and to various Federal agencies. More than one-third of these services resulted from requests for assistance in the investigation of suspected occupational diseases or hazards to health in industry; the others dealt with administrative and informational aspects of occupational health programs. Consultative assistance provided during the year included evaluation of occupational health conditions at the Goddard Space Flight Center and Wallops Island Test Station. A thorough study of occupational health problems and needs in one State was also conducted at the request of the Governor as the basis for an action program.

Research grants.—In 1962 the research efforts of the in-service laboratories and experts were supplemented by the award of 69 research grants to universities and other public and private nonprofit organizations. Those included projects dealing with the fundamental toxicologic mechanisms and early detection of toxic effects in industry; a systematic study of animal behavioral tests as sensitive indicators of toxicity; studies of occupational pulmonary disease ranging from laboratory work with specific gases such as phosgene and nitrogen dioxide to clinical studies of flax workers, coal miners, and individuals exposed to rubber dust, three grants dealing with pulmonary disease of farmers, such as those resulting from the inhalation of silage gas; six projects directed toward the effects of noise on hearing; and a study to develop fundamental knowledge of the physiologic and pathologic effects of vibrating machines and tools on the body. A study was begun on the hazards associated with optical masers and the consequence of heat stress is the subject of two grants.

DIVISION OF RADIOLOGICAL HEALTH

Research

An X-ray pelvimetry study is currently in progress under a contract between the Divisions of Radiological Health and Chronic Diseases of the Public Health Service and the Johns Hopkins School of Hygiene and Public Health. This is a study of the relationship of fetal X-irradiation to the subsequent development of leukemia and other malignancies in children. The radiology departments of nine Baltimore hospitals are participating with Johns Hopkins in this study. The study involves women who had received lower abdominal X-irradiation during the period 1947–56 and who were pregnant at the time of exposure.

The Southeastern Radiological Health Laboratory, Montgomery, Ala., has obtained data from studies of the in utero effect of radiation and of parameters of radionuclide metabolism in cells showing that radiation in the third trimester of pregnancy induces marked changes (cellular damage) in the brain and retina. Functional results of these changes are evident in the confusion and ataxia observable in exposed laboratory animals. It is proposed to investigate the brain and eye damage of low radiation dosage and to determine the period of maximum sensitivity of the fetus.

Plans are well underway for the establishment of a collaborative animal research facility with the University of Colorado. The basic brood stock for the colony of beagles has been procured and the first pathogen-free pups have been delivered by cesarean section. These dogs will be used in studies of low level radiation effects.

The Public Health Service is supporting an investigation in cooperation with the University of Minnesota and the State Health Departments of Colorado, Michigan, and Minnesota of the possible relationship between low level environmental radiation and the incidence of congenital malformations. In this study, congenital malformations occurring in selected urban areas for 3 to 5 years are being listed. These lists will be ranked by relative frequency of occurrence among all live births occurring in these same areas for the same periods, and frequencies for each urban place will be ranked within each State.

The existence of radium in midwest ground water was extensively investigated by Argonne National Laboratory beginning in the early 1950's and analysis of ground water in this area has continued to the present. A study of the population group in this area has been initiated in cooperation with and advice from the Division of Biology and Medicine of the Atomic Energy Commission to provide a better definition of the exposed population and identification of the potentially involved communities.

The cooperative thyrotoxicosis therapy followup study is continuing to investigate the late effects of treatment of overactive thyroid with radioiodine. Approximately 40,000 patients are involved in this study. Twenty-five different medical institutions in the United States and Great Britain are participating in this study. All of the centers are operating effectively and we are now proceeding into the followup phase of the study. Preliminary data for this study should become available in 1964.

A project was initiated in March 1960 in collaboration with the AEC and USDA to develop a method of removing radionuclides from milk without changing the physical appearance, taste, or nutritive quality of the milk. An ion-exchange process has been developed that will remove strontium from milk. Current emphasis is on work to integrate the procedures for removing radiostrontium and radioiodine from milk.

A contract for construction and operation of a commercial system developed from the results of the work referred to above is currently being negotiated. Detailed design of the system is nearly complete and it is expected that a contract will be signed early in 1963. Evaluation for radiostrontium removal efficiency should begin by August 1963.

Studies were initiated at the time of resumption of the nuclear weapons tests for determining the effect of various feeding practices of milk herds on the amounts of radioactive iodine in milk. Three experiment station locations were selected in Minnesota, Iowa, and Utah, and the herds were divided into three groups; one completely barn fed, one completely pasture fed, and a mixed feeding. Results indicated that barn fed cattle on stored feed reduced the amount of iodine in milk to nondetectable levels. A reversal of the herds from pasture to barn and barn to pasture confirm that the reduction of iodine in the milk was indeed caused by reducing the ingestion levels and that inhalation was not a significant factor.

State assistance branch

In the past calendar year, the dental X-ray surpak program has been extended from 24 to 33 States, with 4 more expressing an intention to participate. A total of 21,000 surpaks were shipped for use in State survey programs, and sent filters and collimators to correct 31,500 X-ray machines.

The number of sampling points in the State-operated early warning air sampling network has been increased from 45 to 77, including 3 new stations in South America. All points are on a daily schedule.

Assistance has been given to States in the transfer of regulatory responsibility from AEC to the States for the licensing and control of byproduct radioactive materials. Five States have already done so. For example, a PHS State assignee in the State of Kentucky had headed that State's division of radiological health and has, among other things, provided the professional competence and leadership which enabled Kentucky to become one of the States which had entered into a State-AEC agreement. Thirty-six States now have legislation concerning radiation protection, and in at least 16 States, this includes authority to enter into State-AEC agreement. The number of State assignees has increased from 27 to 49 in 1962. There are now assignees in a total of 29 States and Puerto Rico, including those 5 States which have entered into State-AEC agreements.

A $1,500,000 grants program for the development of State radiological health programs has been initiated. Funds have been disbursed to 48 States, Puerto Rico, and the Virgin Islands through December 1962.

Laboratory and surveillance activities

The Northeastern Radiological Health Laboratory, Winchester, Mass., has been made operational with staff and equipment installed to provide radiological laboratory services for the northeastern area of the United States. In addition, this laboratory is doing developmental work in preparation for the chemical analysis of carbon, tritium, and transuranic elements in environment of media that reach people. It provides laboratory training for State and local health department people from this area. It also participates, along with the other area laboratories, in the analysis of samples providing information in the daily intake of radioactive materials.

A small radiological laboratory was established in the State of Hawaii to assist the State radiological health program and to support the offsite activities related to weapons testing in the Pacific.

Emergency monitoring teams have been selected, trained, and equipped to deal with accidents or incidents involving nuclear materials. For example, there was an accidental spillage of polonium 210 in the physics building of the University of Alabama. The team from the Southeastern Radiological Health

Laboratory was immediately called in and was instrumental in the problem analysis and the decontamination procedures.

Training

The training program provides short-term training courses in radiological health for Federal, State, and local health personnel. During 1963 it is estimated that a total of 90 course weeks in 15 different subject areas will be provided for about 1,200 trainees. Increased efforts have been and will continue to be made to provide these training courses in field locations so as to reach as many State and local health agency personnel as possible.

In 1961, a program of training grants to institutions was started. This program is aimed at the development of graduate degree curriculums through establishing or extending courses for the training of professional radiation health specialists. In the first year, grants were awarded to 15 schools which provided for the training of 40 of these specialists. By June 1963, it is expected that there will be about 30 schools participating with a total specialist-trainee enrollment of approximately 150.

Radiological health technicians are needed to work with the professional radiation specialist. The University of Nevada, under contract with the Division of Radiological Health, is surveying the demands for technicians in the Southwest, is identifying the kinds of training they should have, and is developing a model curriculum. Staff members of the Training Branch, under concurrent appointments as instructors of the Montgomery Junior College, Takoma Park, Md., presented a 2-year college program in radiation technology. Plans are being developed for expansion of radiation technologist training at a number of educational centers across the country. Support of these efforts will be through training grants and contracts.

Twenty commissioned officers are currently engaged in full-time, long-term radiological health-related training programs at selected universities. Through these duty assignments, the Division of Radiological Health is raising the level of the staff competency.

Some 35 commissioned officers and civil service personnel of the Division of Radiological Health are enrolled in extramural part-time training during the fall (1962) term. The areas of study under this program are diverse including transistor technology, chemistry, electronic data processing, and radiobiology.

The audiovisual training aids library, developed in 1962, has increased its services to include films, slides, charts, and colored as well as black-and-white photographs related to the field of radiation. Distribution of such aids is made to the Division of Radiological Health regional consultants, field laboratories, and State agencies as requested.

The effectiveness of this service in stimulating and assisting in the development of radiological health training programs is reflected in the fact that the Division of Radiological Health course manuals are currently used by a number of universities.

Research grants

Examples of significant work done by grantees of the Division of Radiological Health are numerous. The following are examples of research being supported by radiological health research grants.

A project is underway dealing with neoplasms in children treated with X-rays or radium for benign conditions. The importance of this project is to provide information on the effects of radiation on the human population. The major benefit is that the exposure factors have been carefully reported. Previous work by the researcher has shown that the tumor incidence of children treated for thymic enlargement increases sharply during the second and third decade of life. Also demonstrated was that cases of leukemia and tumors of the thyroid gland were especially numerous. The present work being undertaken is an attempt to enlarge the population originally studied and also to continue the morbidity and mortality studies on the original children surveyed in 1953 and 1954. This continuation is necessary in order to establish the true incidence of tumors as a function of dose and other radiation factors.

Another grant is supporting work being done on the effects of radiation on mice embryos. This work has shown that the earliest cleavage stages are the most radiosensitive in terms of lethality to the embryo and that no threshold has been established.

Irradiation during organogenesis (in the rodent embryo, 7 to 13 days and in humans, 15 to 42 days) is most likely to produce gross congenital anomalies, particularly of the central nervous system. Embryos exposed during the later stages of pregnancy showed better survival, but are more likely to respond in terms of functional rather than gross structural anomalies. Such late fetuses possess gonads and germ cells which can accumulate the mutations induced by ionizing radiation for which no mutational threshold has been established. The implications of the work are quite obvious.

One of the most difficult tasks confronting PHS has been the development of methodology for determination of strontium 90 body burden in humans. A tooth survey being conducted in St. Louis under a grant shows promise of contributing to this effort. The work has shown that baby teeth can serve as indicators for strontium 90 body burden. This, it is hoped, will enable other researchers in the field to make more accurate estimates of biological effects in the human population of strontium 90 produced by fallout.

WATER SUPPLY AND WATER POLLUTION CONTROL

Comprehensive water pollution control activity

Completed 100 flow regulation studies through January 1963, under the provisions of the 1961 amendments to the Water Pollution Control Act providing for streamflow regulation recommendations on water storage to control water quality for all planned Federal reservoirs.

Intensive investigations of the source of salt pollution in the Arkansas-Red River Basins, underway for the past 5 years, were completed. It is expected that the report of this project will be submitted to this session of Congress.

International attention has been attracted by control measurements and data processing systems developed by the Great Lakes-Illinois River Basin project to determine the circulation patterns and mass movement relationship of water in the Great Lakes. The first metering stations in a highly complex current measurement system were installed in Lake Michigan late in the fall and findings already are being used to make delicate judgments. As the project has progressed, reports of findings, improvement measures and results have been furnished to the Department of Justice for use in litigation on control of Lake Michigan water and related questions before the Supreme Court. A project field station, established in Cleveland, Ohio, began work on the Lake Erie phase of the study.

An advanced mathematical model was developed to forecast the effects of environmental influences and control measures on water quality of the Delaware River estuary below Trenton, N.J. It has successfully simulated observed conditions in the estuary.

Columbia River project identified siltation as a water pollution problem affecting propagation of fish and other wildlife. Studies have been instituted to review irrigation, forestry management, and other land-use practices which might be applied to silt runoff to streams.

A unique stream identification system was applied to the study area of the Chesapeake Bay-Susquehanna River Basin project. This system is a highly sophisticated method of organizing and storing all stream data relative to its specific geographic location. All water quality projects are adopting this highly efficient system.

Enforcement

The voters in the St. Louis, Mo., area in November 1962 approved a $95 million bond issue to finance the construction recommended by the enforcement action conferees from Missouri, Illinois, the Bi-State Development Agency and the Federal Government in 1957. As another result of the enforcement action, the city of St. Louis has ceased dumping its garbage in the Mississippi River and now incinerates it. Some advances have been made to control the pollution of that river from sources on the Illinois side.

The enforcement program entered two new areas during 1963. The Androscoggin River (New Hampshire, Maine) was the first case in New England. The Florida Board of Health requested an enforcement action on the Escambia River. This was the first action held in the southeastern part of the country.

The President has requested this Department to undertake a cooperative governmentwide program to correct deficiencies in water pollution control practices at Federal installations. This program is being given top priority so that the Federal Establishment can set an example in pollution abatement and control.

Research

Definitive research was completed on the relationship between filtration rates and the removal of viruses in water. It was found that standard filtration rates employed at water treatment plants removed viruses poorly. Efficiency of removal increased as filtration rate was reduced. At the filtration rate comparable with the rate of movement of septic tank effluent through soil, viruses were completely removed in a few feet of representative soils.

Alhyl benzene sulfonate, the essential ingredient of most household detergents was found to be almost completely destroyed as septic tank effluent passed through several feet of unsaturated soil. No reduction occurred, however, in the saturated zone. Two strains of bacteria and a fungus capable of degrading the ABS were isolated from the soil. These studies indicated that the period of contact between sewage effluent and the soil was critical. The studies suggested the practicability of developing design criteria for using soil for biological destruction of ABS in household sewage systems.

Analysis of the characteristics of storm water runoff from urban areas showed that the pollutional load this runoff contributed to the water resource is much greater than hitherto suspected. It amounts to more than 10 percent of the community's raw sanitary sewage.

Work was completed on the concentrations of chromium, zinc, nickel, and copper, singly and in combination, that may be tolerated without harm at the sewage treatment plant, and on the efficiency of treatment processes in removing these toxic heavy metals.

A system utilizing controlled curtailment of air supply to eliminate nitrogen in sewage was developed in the laboratory and placed in pilot plant phase at the Miami sewage treatment plant in Cincinnati. This process promises to remove approximately 80 percent of the nitrogen compounds in treated effluents and thereby significantly assists in controlling nuisance plant growth in receiving waters.

Viruses capable of destroying several strains of nuisance algae were isolated from a waste stabilization pond. This is the first time that virus parasites of algae have been reported. This discovery suggested the possibility of replacing chemical controls of this nuisance plant with biological controls.

Studies on the effect of outboard use on water quality showed that the only significant pollutional effect was offtaste in fish. A relationship between outboard motor boat use and extent of water area was developed as a limiting ratio to prevent this undesirable condition.

Intensive study of the Kanawha-Ohio River system demonstrated the feasibility of a system of organic contaminant detection by use of direct extraction of trace organic contaminants by solvent, analysis of the extract by gas chromatographic separation, and detection of separated components by electron capture techniques. Chemicals found at Cincinnati, Ohio, were found to originate several hundred miles upstream in the Charleston, W. Va.. area.

Ability to identify fecal pollution was promoted by improvement of culture methods for differentiating fecal coliforms from all other strains of coliform organisms. This ability was enhanced further by improvement of culture methods and biochemical tests for isolation and classification of streptococcal strains of intestinal origin. The differentiation of pollution by human feces from that by domestic animals was made more certain by the finding that for animal pollution the ratio between fecal coliform counts and streptococcal counts was approximately 4 to 1, while the reverse ratio applied to human wastes.

The possibility of reducing tuberculation and corrosion of iron pipe was increased by the development of methods for enumerating sulfur bacteria which are often associated with this type of damage.

Earlier reports concerning an inverse relationship between mineral content of drinking water and death by cardiac diseases were confirmed by rigorous epidemiological analysis. However, the fact that waters used by large cities are normally less mineralized than those used by small communities, and the established fact that cardiac disease incidence is higher in large cities, suggests that the mineralization factor may be incidental.

A method was developed for positively identifying zinc as the cause of fish kill where this occurs. This method offers promise that other heavy metals may similarly be identified as having caused specific fish kills.

The dissolved oxygen requirements for the development of eggs and fry of trout and steelhead salmon were established. These dissolved oxygen levels were determined to be critical for the preservation of these fish species.

Studies were undertaken of the feasibility of additional new methods for removal of refractory compounds from waste effluents. Among these methods are electrolytic oxidation of organics (Penn Salt Co.), separation of refractory compounds by eutectic freezing and hydration (Syracuse University), distillation with reference to the nature of scaling and corrosion properties of waste components (W. L. Badger & Associates), and separation of water from impurities by solvents (Texas A. & M.). Laboratory evaluation of the foaming process is being followed by a field study at the Easterly Water Pollution Control Plant serving Cleveland. A treatment plant employing activated carbon with provision for carbon regeneration by thermal energy is being designed for field use.

Basic data program

Progress has been made as follows:

Water quality data now are being obtained regularly from 124 key sampling points on important interstate waters—up 25 from the 99 sampling points established in the first 4 years of the program. Data collection in the year ending September 30, 1962, has required about 160,000 water quality determinations on 15,400 samples of water.

Regular reports on water-and sewer-bond sales, added to reports on construction, have continued to supply valuable economic data on water quality management.

Collection, publication, and analysis of inventories of water and waste treatment facilities have been made truly national in scope, and are operating on a reliable schedule.

Data on fish kills caused by polluted water are being assembled routinely and have given added impetus to the cause of water pollution control.

The inventory of waste water disposal practices at Federal installations throughout the United States was completed and issued as scheduled.

Technical assistance

Continued evaluation of pesticides in water has revealed trace quantities in most surface water examined in ground waters near sites where heavy applications have been made. New measurement techniques developed by PHS scientists have greatly speeded identification and numbers of samples which can be identified.

Reclamation of treated sewage effluents for boating, fishing, and other recreation purposes is undergoing close scrutiny and evaluation. It is involving the examination of chemicals, bacteria, and viruses which may be inimical to public health and aquatic life. It is attracting a great deal of attention in water-short California and the Southwest.

Specialized assistance was provided to communities, States, and other Federal agencies. This included help to several agencies in evaluating the hazards and protecting the public from the dangers inherent in the recovery of 1,100 tons of liquid chlorine from the bed of the Mississippi River and from a similar accident involving 1,200 tons of phenol; other assistance was given State and local agencies where algae and sea lettuce had caused very serious local odor problems at Winthrop, Mass., and several other places during the year. Other assistance was furnished on industrial waste problems involving textile and fertilizer manufacturing. Efforts were initiated to evaluate the small boat and marine pollution sources on a national scale.

Research grants

In 1963, the number of awards will increase to 180 from the 1962 awards totaling 159. A significant factor in this program is the variety of research projects being supported.

Examples are cited from the 1963 grant program to illustrate important investigations:

At the University of Arkansas, Prof. M. K. Testerman is working on the design of a single water-quality monitor which will automatically make continuous and simultaneous readings of several important parameters of water quality. In Washington, D.C., Dr. Benjamin S. Levine is continuing his unique work of translating selected technical papers on water supply and pollution control from the Russian technical literature. This year brought the publication of the second and third volumes of translations.

Dr. T. E. Larson, a chemist associated with the University of Illinois, is continuing his long-term study of corrosion of water distribution systems. This is a basic investigation which has important economic as well as technical implications. At Oregon State University, Dr. Charles E. Behlke is conducting an extensive study of ocean outfall diffusers to improve their design and operation, and thus to make offshore disposal of wastes safer and more effective.

Research fellowships

This program is designed to support individuals who have demonstrated the desire and special talent to carry on independent research in water supply and pollution control. These scientists and engineers are supported for postgraduate study and research in a wide variety of disciplines. They will significantly increase the Nation's trained manpower resources in the water supply and pollution control field.

In 1962, the first year of the program, 25 fellows were supported, most of whom continue work in 1963. In 1963, the appropriation of $300,000 is expected to support a total of 48 fellows. Disciplines specialized in, include sanitary engineering, biology, chemistry, conservation, animal physiology, limnology, ecology, and bacteriology. Project studies include such topics as effects of insecticides on fish, control of water resources, waste treatment, radioactivity in water, and analytical techniques.

Training grants

In 1963, the second year of the graduate training grant program, the number of awards will increase to about 34 from 23 awards in 1962. The purpose of this program is to improve training for graduate students in the traditional water supply and pollution control field; and to provide a stimulus and interest to graduate students in other fields and disciplines whose talents must be brought to bear on many water pollution problems.

At Stanford University, the department of civil engineering is presenting courses in the use of radioisotope techniques in water pollution. Such techniques can be valuable in physical, chemical, and biological analytical and tracing work. At Cornell University, the department of economics is undertaking a curriculum on the economic aspects of water pollution, a new field of great importance in determining benefits, values and costs.

The school of engineering at Clemson College is developing a curriculum in process engineering of waste water treatment. This area is a highly complex mixture of civil engineering, chemical engineering, design, thermo-dynamics, and other fields which has been given far too little attention in recent years. At the University of Wisconsin, the department of civil engineering is offering special graduate training courses in chemistry, a subject of increasing importance to the field of water supply and pollution control.

Demonstration grants

This program is in its second year of operation and is designed to close the gap between the discovery of basic information and its application in practice. In 1962, the appropriation of $300,000 supported 11 demonstration projects. In 1963, $500,000 was appropriated. Because of the increasing cost of continuing grants begun in 1962, this budget will support a total 14 projects, an increase of only 3. With a further approval of at least 20 new projects during 1964, it is expected that the backlog at the end of that year will total 33 approved grants at $1,260,000.

Examples of demonstration grants funded from the 1963 appropriation are noted here. Work continues on the joint undertaking of the Allan Hancock Foundation (University of Southern California) and the State of California Water Pollution Control Board. This project is designed to measure and establish rates of sewage assimilation in a coastal area so that the information may be used by engineers in the design of ocean outfalls. At the University of Florida, a new grant will support the study of iodine as a water disinfectant. This study brings together chemists, engineers, and medical doctors working on a common problem.

In Tennessee and New Jersey, the respective State agencies responsible for fish protection are making notable progress in developing methods of routinely detecting and analyzing pollution, and of determining the causes and courses of fish kills.

Waste treatment works construction grants program

The 4,141 projects approved to January 15, 1963, will improve the quality of water in over 42,000 miles of stream for use as public and industrial water supplies, propagation of fish and wildlife, recreation, agricultural, and other legitimate uses.

	Number	Estimated project costs (in millions)	Grants made or requested (in millions)
Grant offers made (July 30, 1956–Jan. 15, 1963)	4,141	$2,219.3	$358.4
Projects under construction	943		
Projects completed	2,341		
Projects awaiting construction	857		
Additional applications being processed in regional offices and State agencies	571	436.2	77.8
Total applications approved and in process	4,712	2,655.5	436.2
Activities during calendar year 1962:			
Grant offers made	900	643.9	88.2
Projects placed under construction	722		
Projects completed	518		

ARCTIC HEALTH RESEARCH CENTER

A dietary survey of 1,800 Eskimos and Indians in western Alaska has answered the question whether the Eskimo has a high fat diet. He doesn't. His calories measure 30 to 40 percent fat against 40 to 45 percent for the average U.S. citizen. Less than 15 percent of his calories are supplied by fats from local sources—the remainder is imported and bought from the local store. He gets over one-third of his calories by hunting and fishing. And almost 60 percent of calories are imported. The prospects are that imported foods will become more important in the future.

Methemoglobinemia in Greece proves similar to type found in Alaska: Blood samples collected by AHRC personnel in Greece, and analyzed in center biochemistry lab show the same diaphorase-deficient type of methemoglobinemia as that discovered among Alaskan Indians. The center is receiving numerous requests for analyses by methods devised and standardized by biochemists at AHRC.

Radioactive fallout in parts of Alaska was among the highest in the country if the cumulative level of iodine 131 in milk as determined by routine sampling procedures is a true indication. Milk from the Palmer milkshed shows an accumulative value of 36,910 (micromicrocuries) for the 12-month period through November 1, 1962. This finding is compatible with other reports of extremely high strontium 90 accumulations in caribou antlers. These animals graze on lichen and mosses, which appear to concentrate fallout radiation.

A home treatment system for removal of iron from ground and surface water has proven successful in field tests for reduction of iron from 80 parts per million to 1 or 2 parts per million, making potable waters with very high iron content at the source. Much of the available ground water throughout interior Alaska is almost unusable because of the iron. This method can be used economically by a single family or a small community.

Oxidation ponds for sewage treatment are being used successfully in Alaska. The center is assisting with design and evaluating function of ponds extending from above the Arctic Circle to 58° north latitude. The Air Force is installing a pond for use of one of its larger remote stations.

Control of dogs pays off in lowered rates of infection with hydatid disease among arctic voles in and around Gambell, St. Lawrence Island, Alaska. The vole is the intermediate host of this parasite, an important infection in man in Alaska. It is infected by ingesting eggs from the waste of dogs and fox. Within the village the rate of infection of voles was 8 percent, on the outskirts 31 percent, and in remote areas 44 percent.

AHRC study establishes validity of three species of *Echinococcus*. Intensive study by AHRC parasitologists of specimens from Africa, Eurasia, North and South America has resulted in a revision of the genus *Echinococcus*, and has established the validity of three rather than five species. The three species include *Echinococcus granulosus*, *E. multilocularis*, and *E. oligarthrus*.

Study shows that 80 percent of illnesses of Eskimo infants during the first year of life are due to infectious diseases: of these 60 percent affect the respiratory tract. One-fourth of a sample of infants had one or more episodes of acute ear infection between the ages of 1 and 9 months. Chronic ear infections account for great loss of hearing among these children by age 10.

Two events this year emphasized the growing recognition of the special problem and opportunities in our Arctic and subarctic regions.

(1) A committee of eminent scientists recommended that an institute for the study of arctic biology be established at the University of Alaska, to include basic investigations.

(2) The WHO sponsored the first international conference on arctic and antarctic medicine and public health, bringing together scientists from 12 countries, to discuss problems and progress in these countries. Valuable information on arctic medical and health problems is for the first time collected and is to be published by WHO.

BUREAU OF STATE SERVICES MANAGEMENT FUND

WITNESSES

DR. ROBERT J. ANDERSON, CHIEF, BUREAU OF STATE SERVICES
PETER J. BERSANO, FINANCIAL MANAGEMENT OFFICER FOR ENVIRONMENTAL HEALTH PROGRAMS
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	$2,382	$3,121	$4,229
Positions other than permanent	25	34	36
Other personnel compensation	10	15	47
Total personnel compensation	2,418	3,169	4,312
12 Personnel benefits	213	293	361
21 Travel and transportation of persons	125	139	206
22 Transportation of things	16	23	31
23 Rent, communications, and utilities	118	203	246
24 Printing and reproduction	52	46	57
25 Other services	64	69	103
26 Supplies and materials	104	141	169
31 Equipment	58	80	146
Total obligations	3,169	4,164	5,630

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	393	477	623
Full-time equivalent of other positions	4	5	5
Average number of all employees	359	455	589
Number of employees at end of year	394	479	650
Average GS grade	7.4	7.4	7.7
Average GS salary	$6,639	$6,943	$7,040
Average salary of ungraded positions	$5,237	$5,219	$5,226

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Research services	$843	$1, 168	$1, 296
2. Business operations	1, 836	1, 939	3, 101
3. Program direction	281	331	370
4. Program services	168	707	863
Total program costs, funded [1]	3, 128	4, 145	5, 630
Change in selected resources [2]	41	19	
Total obligations	3, 169	4, 164	5, 630
Financing:			
Advances and reimbursements from other accounts	3, 189	4, 164	5, 630
Unobligated balance lapsing (−)	−21		
Total financing	3, 169	4, 164	5, 630

[1] Includes capital outlay as follows: 1962, $77,000; 1963, $36,000; 1964, $26,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $74,000 (1962 adjustments, −$54,000); 1962, $61,000; 1963, $80,000; 1964, $80,000.

Mr. FOGARTY. The management fund will not appear in the bill at all, will it?

Mr. BERSANO. No, sir.

Mr. FOGARTY. While I am sure you would be guided by our committee report if we said to do or not to do something, it is really not subject to action by the House since the House cannot amend the report; they can only amend the bill. I had misgivings about setting up this fund and am still not sure we did the right thing.

PERSONNEL INCREASE

You have over a 30 percent increase in personnel to be financed from this fund in 1964. Why is that?

Dr. ANDERSON. One of the things that is provided for in the management fund is a decentralization of personnel services from the Office of the Surgeon General to the bureaus. In order to perform this function according to the recommendations of the Folsom committee, we are going to need people to do personnel functions of the sort that they envisioned in their report, and this is one of the items that is in the increase for 1964.

Another item is three positions for a program staff at the bureau level in environmental health to assist in the development of coordinated programs where such would benefit individual programs and the total program.

For example, we are operating surveillance networks now in air, in water, and in radiation. Each of these can contribute certain bits and pieces of information. It is desirable to use this information to its maximum extent if the programs can be developed in that fashion.

This is the kind of function the three positions in the environmental health program office would perform.

Mr. BERSANO. Mr. Chairman, I would like to add to that. Of this 146 increase in positions, 83 of them are being transferred from other existing appropriations. Of that amount, 16 of them will perform the personnel function, and the balance will perform the function of grants administration in the community health area.

Mr. Fogarty. So they are being transferred from appropriations into the management fund?

Mr. Bersano. Yes, sir.

ESTABLISHMENT OF NEW BRANCHES

Mr. Fogarty. If I understand the justifications correctly, you are establishing a Personnel Management Branch in the Office of the Chief for Community Health——

Mr. Kelly. That is correct.

Mr. Fogarty. Page 181. Is that correct?

Dr. Anderson. Yes, sir. And for environmental health, too.

Mr. Fogarty. And a Contracts Management Branch for community health programs, page 181?

Mr. Kelly. Yes.

Mr. Fogarty. And an office of management, page 186?

Mr. Kelly. Yes.

Mr. Fogarty. Why are all these things necessary?

Dr. Anderson. The Contracts Branch, for example, is the point at which the contract negotiations are reviewed. The Contracts Branch assists in negotiating contracts with the project officers that are assigned to projects by divisions to assure that the elements of cost in negotiated contracts are correct, justified, and that the terms of the contract are written in such a way that it is well understood by all parties. There is no contract officer or review function at the divisional levels. This is done for all divisions of the bureau.

Mr. Fogarty. Why do you feel it is necessary to establish a Personnel Management Branch in the Office of the Chief for Community Health?

Mr. Kelly. The Personnel Management Branch, Mr. Chairman, comes from the recommendation of the Folsom Committee to decentralize personnel operations and, throughout the entire budget, we have quite consciously presented to you a plan which has in the Surgeon General's office only that processing which is felt must be done centrally and, to the maximum degree possible, we have tried to decentralize it. Up until this time, these kinds of functions have not been carried out.

This does not result in a decrease in staff; it merely results in an increase in personnel staff. Because the Folsom Committee concluded the long-range responsibilities of the Public Health Service require much greater attention to the total personnel problem than had been given to it.

I would like to endorse what Dr. Anderson said about the contract problem. We have increasingly used the negotiated contract to fulfill our responsibilities and feel a need for persons who specialize in the negotiation of contracts and in the development of the terms and conditions—not the determination of what the program should be and what the Public Health Service wants to do versus what the contractor is to provide, but to make sure that the procurement arrangement for accomplishing that is on the terms that are most favorable to the Government.

REGIONAL HEALTH STAFF

Mr. FOGARTY. You plan to finance the associate regional health directors and their staffs from this fund next year instead of from the appropriations. Why are you doing it that way?

Mr. BERSANO. Currently in 1963 this staff is being funded from the various categorical appropriations in environmental health. Since they are part of the Office of Bureau Chief of Environmental Health, we felt that they would be best funded from the management fund, which funds all of the Office of the Bureau Chief.

Mr. FOGARTY. You know we have had complaints about this way of doing things in some of these categories before.

Mr. KELLY. We have, Mr. Chairman, but what happens is we are trying to present to you in the most honest way we know how those people who provide services and program direction to a number of programs that are financed by separate appropriations. To not do it this way means that you select some appropriation to pay them from, and people are being paid from appropriations that they work for only part of the time, and the result is that it is not disclosed in the presentation to you.

This way we are disclosing fully that these people work on multiple programs and constitute a part of the program direction. We feel that it is the most honest and straightforward way of presenting it to you and most accurately accounts for the funds that we are expending on each of these programs.

CHARGES TO BENEFITING PROGRAMS VERSUS DIRECT APPROPRIATION

Mr. FOGARTY. To me, it would be a lot clearer, as well as giving Congress better control, if we had a direct appropriation for the Office of the Bureau Chief. Would you have any objection to that?

Mr. KELLY. This is a possibility of doing it. But let me say that when you do it this way, that you then fail to cost the individual programs in terms of the amount of money that is actually being spent.

In this way, just to use a simple example, when we payroll a person in water pollution, the cost of payrolling is shown in water pollution. We have had a lot of arguments that we do not adequately show in one place the total cost of water pollution. During the last 3 or 4 years, we have been gradually reorganizing the budget to a point where the amount of money shown for water pollution in the budget is pretty nearly the total cost of water pollution; the services they get, they pay for; and they do not pay for anything for which they do not get a service.

Mr. FOGARTY. The Office of the Chief of the Bureau of Medical Services does not have a direct appropriation.

Mr. KELLY. No, sir, he does not.

Mr. FOGARTY. But neither is that office financed the same as the Bureau of State Services? Is that not right?

Mr. KELLY. No, sir. But we have given serious consideration to recommending it.

Mr. FOGARTY. Just how is it financed?

Mr. KELLY. By and large it is financed out of the appropriations that are made to it.

Of course, in this instance, there are only three major programs that are funded in that organization, the largest one being "Hospitals and Medical Care."

Mr. **Fogarty**. Where does the cost of financing the Office of the Chief of the Bureau of Medical Services show up in the budget?

Mr. **Kelly**. It does not, sir. Because it is in the base, we would have to identify it for you.

Mr. **Fogarty**. It is almost like trying to find in the budget how much it costs to finance some of these Presidential committees.

Mr. **Kelly**. It has a similarity.

Mr. **Doran**. If the Bureau of Medical Services had a management fund, then the cost of the Office of the Bureau Chief would show.

Mr. **Fogarty**. I think most of these things are worthwhile. In fact, I think we should be spending a lot more money in many areas of the Public Health Service, but I also think the cost should be clearly shown in the budget.

You do not have any objections to that, do you?

Mr. **Kelly**. We do not, sir. But we think that this method that we have developed has been a sound one. We are quite responsive to the statements made by the committee in its report.

Mr. **Fogarty**. Yes, you have. We have no complaints on that score—not in the last several years.

Mr. **Kelly**. I think as a matter of fact you could handle it in the same way that was envisioned by the Corporations Control Act of 1945 where financial statements of this kind are presented to you, and you can place in the report a limitation against anything in our plan which you think to be inappropriate, so that it would be in the bill.

Mr. **Fogarty**. I have, perhaps, spent more time on this than it is worth. You have been quite responsive to any instructions in the report. But I was struck by the rather large increase in this fund.

Is there anything else you want to say, Dr. Anderson, before you leave here this evening?

Dr. **Anderson**. No, sir.

Mr. **Fogarty**. Is there anything else you want to say, Dr. Terry?

Dr. **Terry**. No, sir.

Mr. **Fogarty**. Thank you very much.

We will convene at 10 o'clock in the morning.

HOSPITALS AND MEDICAL CARE

THURSDAY, MARCH 7, 1963.

WITNESSES

DR. MYRON D. MILLER, CHIEF, DIVISION OF HOSPITALS
DR. HOWARD D. FISHBURN, CHIEF MEDICAL OFFICER, COAST GUARD
NORMAN E. LINDQUIST, DIVISION EXECUTIVE OFFICER
LEO JOEL, DIVISION BUDGET OFFICER
DR. JAMES V. LOWRY, CHIEF, BUREAU OF MEDICAL SERVICES
DR. LEO J. GEHRIG, DEPUTY CHIEF, BUREAU OF MEDICAL SERVICES
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	$34,969	$36,513	$37,954
Positions other than permanent	714	737	757
Other personnel compensation	1,092	1,120	1,283
Total personnel compensation	36,775	38,370	39,994
12 Personnel benefits	4,213	4,394	4,805
21 Travel and transportation of persons	522	491	497
22 Transportation of things	512	478	479
23 Rent, communications, and utilities	1,076	1,082	1,088
24 Printing and reproduction	107	108	108
25 Other services	4,255	2,466	2,521
Services of other agencies	1,906	917	876
26 Supplies and materials	5,740	5,894	6,236
31 Equipment	976	744	413
41 Grants, subsidies, and contributions	1,210	1,210	1,210
42 Insurance claims and indemnities	6		
Subtotal	57,298	56,154	58,227
Deduct quarters and subsistence charges	423	440	440
Total obligations	56,875	55,714	57,787

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	6,954	6,968	7,049
Full-time equivalent of other positions	121	121	121
Average number of all employees	6,607	6,732	6,813
Number of employees at end of year	6,967	7,021	7,102
Average GS grade	5.0	5.0	5.0
Average GS salary	$5,106	$5,348	$5,351
Average salary of ungraded positions	$4,549	$4,800	$4,677

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Inpatient and outpatient care	50,288	51,876	53,848
2. Dependents' medical care	2,032		
3. Coast Guard medical services	1,379	1,449	1,529
4. Operation of health units	782	897	917
5. Personnel detailed to other agencies	264	292	293
6. Payments to Hawaii	1,200	1,200	1,200
Total program costs, funded [1]	55,945	55,714	57,787
Change in selected resources [2]	930		
Total obligations	56,875	55,714	57,787
Financing:			
Advances and reimbursements from (−)—			
Other accounts	−5,967	−6,847	−7,205
Non-Federal sources [3]	−607	−527	−544
Obligations in excess of availability (−)	−292		
New obligational authority	50,009	48,340	50,038
New obligational authority:			
Appropriation	50,009	47,602	50,038
Proposed supplemental due to pay increases		738	

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[1] Includes capital outlay as follows: 1962, $1,075,000; 1963, $744,000; 1964, $413,000.

[2] Selected resources as of June 30 are as follows:

	1961	1962 adjustments	1962	1963	1964
Stores	678		723	723	723
Unpaid undelivered orders	1,021	213	2,119	2,119	2,119
Total selected resources	1,699	213	2,842	2,842	2,842

[3] Reimbursements from non-Federal sources represent collections from pay patients (42 U.S.C. 221).

GENERAL STATEMENT

Mr. FOGARTY. The committee will come to order.

We will take up "Hospitals and medical care." Do you have a statement for the committee, Dr. Miller?

Dr. MILLER. My full statement has been filed and I have a brief summary statement that I would like to read.

Mr. FOGARTY. We will file your prepared statement.

(The statement referred to follows:)

Mr. Chairman and members of the committee, this appropriation finances a program of medical care for an estimated 350,000 persons legally entitled to receive it from the Public Health Service. Most of these beneficiaries do work that is vital to the Nation's defense and prosperity. They include American merchant seamen; officers and enlisted personnel of the U.S. Coast Guard; officers and crew members of the U.S. Coast and Geodetic Survey; commissioned officers of the Public Health Service; active and retired members of these uniformed services and their dependents; civilian employees of the Federal Government injured in performing their work; and several other groups. Patients with leprosy and persons addicted to narcotic drugs are also cared for, as defined by Federal law. Currently this appropriation supports 15 U.S. Public Health Service hospitals, 25 outpatient clinics, and also provides for outpatient care through 115 outpatient offices.

Provision also is made for reimbursement to the State of Hawaii for the care of patients with leprosy in the Hawaiian Islands. In addition to the beneficiary groups already named, medical services are furnished on a reimbursable basis to many others, including members of the Armed Forces and their dependents under the medicare program, foreign seamen, certain beneficiaries from other Federal agencies, including the Immigration and Naturalization Service, Bureau of Prisons, State Department, Maritime Administration, Veterans' Administration, and others. Services also are provided for Federal employees under the Federal employee health program.

RECRUITMENT AND TRAINING

The hospitals and medical care program performs a wide range of beneficial services and functions in addition to its primary purpose of providing medical care for the above groups. This program plays a major role within the Service in the recruitment and training of physicians, dentists, nurses, and other types of health personnel. The training of these professional and health personnel contributes to the Nation's medical, dental, and health manpower. The program represents a vital source in supplying professional personnel to the U.S. Coast Guard, Bureau of Prisons, Coast and Geodetic Survey, and many other departments of the Government. Many key personnel of the Service received training in the Division's hospitals and clinics. Other programs such as the Division of Indian Health depend in part upon the Division for personnel, trained in the various medical specialties.

OTHER FUNCTIONS

Current examples of other servicewide values attributable to the Division of Hospitals include: (*a*) Collaboration in emergency health planning with the Division of Health Mobilization. (*b*) Collaboration in development of hospital staffing standards with the Division of Hospital and Medical Facilities. (*c*) Collaboration with the National Institutes of Health in various research projects. (*d*) Participation with the Division of Chronic Diseases in providing training and experience in conducting detection surveys—cancer and diabetes. (*e*) A cooperative project with the Division of Nursing on nursing studies.

To the broad field of hospital administration, the Division is a potentially effective contributor. The system's hospitals and clinics can provide the setting for studies which are beneficial in improving the utilization of medical, dental, nursing, and other professional services.

In summary, the tangential functions and services of the hospitals and medical care program are of prime significance to the Service, Department, and the Nation, and must be considered together with its direct medical care program.

THE 1964 NEEDS

A total of $57,787,000 is requested to meet program needs for 1964. Of this amount, $7,749,000 represents reimbursements for medical care supplied to beneficiaries of other Government agencies and for other services. The estimate, therefore, represents a net request of $50,038,000 in appropriated funds. The increase of $1,556,000 over the funds available for 1963 is the net effect of the following items of increase and decrease:

The sum of $1,105,000 will be required for increased mandatory expenses. The major part of this requirement, $816,000, represents the cost of carrying on a full year basis newly-enacted salary raises for civil service personnel and higher quarters allowance for commissioned officers. Two extra days' pay and cost of statutory promotions require $220,000 more than last year, and $39,000 is needed for personnel who are transferred in the estimates from the Office of the Surgeon General to the Bureau of Medical Services primarily to handle Bureau civil service personnel functions and activities. The remaining $30,000 of mandatory items is required for annualization of increased 1963 expense including the increase in social security taxes.

Our patient care operations have been characterized by a continuing reduction in average stay from 23 days in 1958 to 20 days in 1962. This accomplishment is the result of improved care arising through prompt diagnosis, and more efficient and concentrated care. This reduction in average stay also demonstrates the results of the strengthened program made possible by the Congress over this period. Increased hospital care of women and children since the medical program was established is an additional factor that decreased the overall average period of hospitalization. Although shorter periods of hospitalization are made possible by more intensive care of patients, additional personnel are required to provide the increased care. To continue our progress in the hospitals and clinics, 63 additional medical and supporting personnel are requested of whom 50 will provide services to children in pediatric units to be set up in the Boston, Norfolk, and Staten Island Hospitals. In addition to meeting the need for medical care for children, the pediatric units are required for the hospitals to continue its approved training program for medical interns.

To reenforce the program evaluation and review at the Bureau of Medical Services level and to assist in the preparation of construction and alteration program plans, two additional employees are required.

With the intensification of patient care and with the introduction of newer, more efficient, but more expensive medications, there is a need to increase the amount of drugs furnished per patient-day and to provide for a broader and therefore more costly inventory of patient supplies. An increase of $332,000 is therefore requested to increase the rate of issue of inpatient and outpatient supplies by 10 cents and 5 cents per day, respectively, and to raise inpatient inventories from 56 to 66 days' supply.

An increase of 11 positions and $76,000 is needed to supplement the research staffs at our hospitals. The additional staff will permit the establishment of a metabolic research unit at our San Francisco hospital and to amplify our capabilities for cooperative research with universities as well as for undertaking additional intramural research activities.

Decreases of $438,000 are proposed as an offset to the increases. Included in this amount is a $331,000 decrease in equipment.

This estimate also contains funds for medical and dental care for personnel at Coast Guard installations and on ships as distinguished from those services provided in the hospitals and outpatient clinics of the Service.

These services are made available to some 32,000 active-duty personnel and about 22,000 reservists. Full-time medical, dental, and ancillary staff are assigned where there are sufficient concentrations of personnel to make the operation of such facilities more economical to the Government, or where otherwise necessary. Full-time medical personnel are assigned to 23 land installations and several larger vessels of the Coast Guard.

Small concentrations of Coast Guard personnel are given medical and dental care by local contract doctors and dentists. There are approximately 500 small stations.

An increase of $50,000 is requested for additional medical and dental services and supplies for Coast Guard personnel. This increase will permit elevation of the present level of the medical supply issue and provide medical and dental services, including specialist services, for personnel stationed in isolated locations.

CONSTRUCTION AT CARVILLE

During the hearings last year, the chairman of this committee requested that a report of the study of construction needs at the Carville hospital be incorporated in the statement to be presented with these estimates.

The feasibility survey conducted at Carville in 1958 under a contract awarded by the Public Buildings Service of GSA disclosed the need for certain new facilities, for modernization or replacement of certain of the existing buildings, and for replacement of obsolete and inadequate mechanical services.

As mentioned by the chairman during the hearings last year, one of the projects recommended was the conversion of 12 old, patients' dormitory buildings. into attractive modern units—284 units for single patients and 22 apartments for married couples.

Congress provided funds in 1958 for a pilot project to convert two buildings. The converted buildings provided individual bathrooms and were air conditioned in addition to being improved by modern lighting, functional rearrangement, and new furnishings. One building, No. 16, was converted for occupancy by 24 single patients and another building, No. 20, was converted into 12 small apartments for married couples, consisting of a living room, pullman-type kitchen, bedroom, bathroom, and closets. The refurbished buildings afford much greater comfort, privacy, and convenience for these unfortunates. Blind and physically handicapped patients are housed in the building converted into units for single patients.

In the past year, we have been reviewing the earlier feasibility study in light of current requirements. It is expected that a revised program plan will be completed by May 1, 1963. Funds are available to the General Services Administration for proceeding with the development of detailed plans and specifications for Carville as soon as the revised program plan is reviewed and accepted. Funds are also requested through GSA in 1964 to provide a start of actual construction of some of the needed facilities.

We are most appreciative of the interest and efforts of this committee toward improving the Carville hospital.

Mr. FOGARTY. Go right ahead.

BENEFICIARIES

Dr. MILLER. Mr. Chairman and members of the committee, I appreciate this privilege of appearing before you in connection with budget proposals for the Division of Hospitals. It is a program which provides medical care for approximately 350,000 persons who are legal beneficiaries of the Public Health Service. Most of these individuals are engaged in occupations which are vital to the Nation's defense and economy. They include American merchant seamen, members of the U.S. Coast Guard, the Public Health Service, the Coast and Geodetic Survey, and eligible retired personnel and dependents of these uniformed services. Care is also furnished to civilian employees of the Federal Government injured while performing their work, individuals addicted to narcotic drugs, and patients with leprosy within the continental United States. Financial assistance is also provided to the State of Hawaii for the care of leprosy patients within that State.

Medical services are furnished, on a reimbursable basis, to many others, including members of the Armed Forces and their dependents, veterans, and foreign seamen. Health services are also provided for Federal employees under the Federal employee health program.

INCREASE REQUESTED FOR 1964

A total of $57,787,000 is requested to meet program needs for fiscal year 1964. Included in this amount is $7,749,000 in anticipated reimbursements for medical care supplied to beneficiaries of other governmental agencies, and for other services. The net request is, therefore, $50,038,000 in appropriated funds. The increase of $1,556,000 over funds available for fiscal year 1963 is itemized in detail in the estimate which has been submitted. Mandatory items account for $1,105,000 of this amount. Program increases requested amount to $889,000. Partially offsetting these increases are proposed decreases of $438,000 including a $331,000 decrease in equipment.

SERVICES RENDERED

The average length of stay for a patient in the general hospitals has been reduced from 23 days in 1958 to 20 days in 1962. This was accomplished by improved patient care arising through prompt diagnosis, and more efficient and concentrated care. This reduction in average stay also demonstrates the results of a strengthened program made possible by the Congress over this period. Hospital care for women and children since the medicare program was established for dependents of Armed Forces personnel is an additional factor that decreased the overall average period of hospitalization.

Although shorter periods of hospitalization are made possible by more intensive care of patients; additional personnel are required to provide for the more concentrated activities. To continue our progress in the hospitals and clinics an additional 63 medical and supporting personnel are requested; 50 will provide services in pediatric units to be set up in the Boston, Norfolk, and Staten Island hospitals. In addition to meeting the medical needs of children, the pediatric units are required for continued approval of medical internship training.

Intensified patient care requires the use of more of the newer drugs which are more effective but unfortunately also more expensive. In addition, hospital and medical supplies are needed in larger quantities but the newer, safer supplies which include disposable items, are more costly. To buy these necessary drugs and supplies, we are requesting $332,000 more than was in the 1963 budget.

RESEARCH PROGRAM

Clinical research in our hospitals, which was initiated with the interest and assistance of the Congress, is developing well. To strengthen and extend clinical research, an additional 11 positions and $76,000 is requested. This increase will permit the establishment of a metabolic research unit at our San Francisco Hospital, and make it possible for us to strengthen our cooperative research programs with the universities. These programs are beneficial both in improving the stature of our training programs and treatment of our patients.

This appropriation estimate also contains a request for $50,000 in funds for providing medical and dental care for Coast Guard personnel at their installations. The present level of medical supplies is inadequate to meet the needs for medical services for the personnel in the U.S. Coast Guard. In addition, there have been cost increases in supplies and materials; $10,000 is therefore requested in this budget to meet these needs. The U.S. Coast Guard has personnel stationed in many isolated locations. Additional funds of $40,000 are requested to provide additional local medical, dental, and laboratory services, including specialist services, to personnel at isolated stations.

I shall be happy to provide any additional information.

Mr. FOGARTY. Thank you, Doctor.

INCREASE REQUESTED FOR 1964

The appropriation for 1963 is $47,602,000; and the request for 1964 is $50,038,000?

Dr. MILLER. Yes, sir.

Mr. FOGARTY. Including the proposed 1963 supplemental and advances from other sources, it is estimated that $56,231,000 will be available in 1963 and $57,787,000 will be available in 1964?

Dr. MILLER. Yes, sir.

Mr. FOGARTY. An increase of $1,556,000, and 81 positions?

Dr. MILLER. That is correct, Mr. Chairman.

LANGUAGE CHANGE

Mr. FOGARTY. I notice you are requesting a change in the appropriation language. Why do you need this change?

Dr. MILLER. The change in the appropriation language relative to the Coast and Geodetic Survey?

Mr. FOGARTY. Where it says:

> *Provided*, That when the Public Health Service establishes or operates a health service program for any department or agency, payment for the estimated cost shall be made by way of reimbursement or in advance for deposit to the credit of this appropriation.

Why add "reimbursement"?

Dr. MILLER. Mr. Joel, my finance officer, is here.

Mr. JOEL. This gives an alternative way, if necessary, to provide medical service. Formerly, payment had to be in advance only and now we can do it this way.

Mr. FOGARTY. You can perform some of this work and then be reimbursed?

Mr. JOEL. Obtaining authority from the Budget Bureau to spend this in anticipation of reimbursement.

Mr. FOGARTY. The language after the words "Provided further," was added 2 to 3 years ago as a temporary measure?

Mr. JOEL. That is right.

Mr. FOGARTY. Do you still need it in 1964?

Dr. MILLER. At this time, Mr. Chairman, it is still necessary. However, I understand that bills have been introduced in both Houses to correct this. It will be unnecessary in the future, if passed.

Mr. FOGARTY. I might as well read it:

> That this appropriation shall be available for medical, surgical, and dental treatment, and hospitalization of retired ships' officers and members of crews of Coast and Geodetic Survey vessels, and their dependents, and for payment therefor.

Mr. KELLY. What Dr. Miller said is correct. When we asked that you include it in the language, Mr. Chairman, we asked for it for 1 year. It came about by reason of the fact that there was an amendment to the Public Health Service Act that, by oversight, they occasioned these people to be deleted as beneficiaries. The decision was made, however, that rather than amend the Public Health Service Act, to correct this oversight, legislation would have to be enacted. That was under the jurisdiction of the Department of Commerce and we have worked with the Department of Commerce to get them to get the legislation enacted.

The legislation deals with problems that are much more profound than just this question of hospital care and relates to the whole Coast and Geodetic Survey. The Department of Commerce and the Budget Bureau apparently have spent considerable time trying to iron out an acceptable piece of legislation.

As I understand it, there is now legislation pending before the Congress which would authorize this and remove the necessity for our having special appropriation language. Without this language, these people would be denied the benefits which they have received for a great number of years.

Mr. LAIRD. Mr. Chairman, this has been going on for at least 2 years; 2 or 3 years ago this was going to be taken care of right away, and this is subject to a point of order. Maybe the only way it will be taken care of is to have it out of the bill. That might stir up some action to get it taken care of in the proper way.

Mr. **Kelly**. I can only say to you that with respect to the point of order, you asked us to take action and we are moving to take action. With respect to this point-of-order language, it is not in a bill of HEW's legislation, but is a Department of Commerce item and I have told you all that we know about it and all we can do about it. But a denial of this language would keep us from being able to continue treating these individuals as eligible beneficiaries at our hospitals.

Mr. **Fogarty**. Do you think it would speed things up if we dropped it from this bill? That is about the same question Mr. Laird asked. I guess you answered it.

Mr. **Laird**. I do not think he did. But I thought he did a nice job of talking.

Dr. **Lowry**. I thought you gentlemen could tell us about the legislative speed of it. We could tell you about penalizing some beneficiaries. That's the side of the problem we know of.

Mr. **Fogarty**. This is not your business, anyway. This is the Department of Commerce and Congress business, but I would think you would have some responsibility to push the Commerce Department a little so that these people don't lose their benefits. There isn't a thing we can do about it if somebody raises a point of order when this is before the House.

TRANSFER FROM SURGEON GENERAL'S OFFICE

What is involved in the transfer from the Surgeon General's Office?

Dr. **Miller**. There are four personnel and one supply positions that are being transferred from the Surgeon General's Office to the Office of the Bureau Chief of the Bureau of Medical Services, which is an administrative reorganization.

Mr. **Fogarty**. Is this what we discussed yesterday?

Dr. **Terry**. It is the same thing we are doing in other bureaus.

INCREASE FOR PHARMACEUTICAL SUPPLIES

Mr. **Fogarty**. Over $1 million of the increase is for mandatory cost increases. Your largest program increase is $332,000 for elevation of patient supply and drug issues and inventories.

What does that mean, "elevation of patient supply"?

Dr. **Miller**. Increasing the availability of the amount of supplies available to the hospitals.

Mr. **Fogarty**. Why do you need that?

Dr. **Miller**. Our hospitals are constantly laboring under the handicap of having an inadequate amount of supplies, and, in addition to that, there is a continuing increase in the cost of supplies, particularly among drugs, and these are becoming more expensive. The newer drugs are coming on the market and I think one of the primary problems in our hospitals has been the inadequate amount of supplies to provide good patient care.

Mr. **Fogarty**. This committee has been insisting, for some time now, that if you are going to run these hospitals we want the people who are eligible for this care to have first-class care, not second- or third-class care.

Dr. **Miller**. We recognize that, and appreciate it very much.

Mr. FOGARTY. Why has the level gotten too low? I thought we were doing a pretty good job over the last 7 or 8 years in allowing you about what you asked for.

Dr. MILLER. Our level fluctuates considerably from time to time, but at this moment our patient loads, particularly our outpatient loads, have increased very markedly and the pharmaceuticals that are supplied to patients are very heavily expended in the outpatient area, and this has exceeded our predictions.

In addition to that, there has been the need, as I mentioned, for additional new pharmaceuticals and more costly pharmaceuticals. It seems to be an endless process trying to supply sufficient amounts, and, because of these demands, the inventory has decreased and now we are at a point where it must be replaced.

INCREASE FOR PEDIATRIC UNITS

Mr. FOGARTY. The increase involving the most personnel is $264,000, and 50 positions to set up 3 pediatric units. Tell us why you need these units, and give us some information on how this $264,000 will be spent.

Dr. MILLER. The training of interns in our hospitals requires specialization in four major categories: Medicine, surgery, pediatrics, and obstetrics. The regulations require that three of these four specialty training areas be done in the parent hospital. In the past, we have been able to provide such training on a basis of not having an organized pediatric department in the hospital, but with the intern being permitted to treat the outpatients and some of the inpatients who are scattered through the hospital.

The Committee on Internships and Training, the Joint Commission on Accreditation, has required that we have organized, well-established pediatric services in our hospitals, so it is necessary that we establish these, and in order to do so it is necessary for us to staff these hospital programs with competent personnel. And that is the reason we are requesting 50 personnel for these three hospitals.

INCREASE IN REGULAR STAFF

Mr. FOGARTY. What is this item, "Additional staff and related costs in operations," for which you are requesting an increase of $152,000 and 15 positions?

Dr. MILLER. The 15 positions that we are requesting are for additional staff within our hospitals to meet some of the shortages which have existed. Our personnel has been at a very critical point to care for the patients we have, and we are asking for 15 additional positions. These are primarily doctors for inpatient and outpatient care.

RESEARCH PROGRAM

Mr. FOGARTY. You are also requesting an increase of $76,000 and 11 positions for research. Where will these people be stationed and what type of research will they do?

Dr. MILLER. The research programs that we have established are progressing very well. In our San Francisco hospital we are planning to establish a metabolic ward for research. This will require six of the positions.

In our other hospitals where we have established research departments, there is need for five additional personnel to provide technicians and others to assist the research.

Mr. Fogarty. Have you any accomplishments you would like to tell us about in your research program in the last few years?

Dr. Miller. Yes, Mr. Chairman.

Mr. Fogarty. When was this research program started?

LEPROSY RESEARCH

Dr. Miller. Through the assistance of the Congress and this committee, our first research was started at the Carville Hospital in 1959. At this hospital we have been focusing our attention primarily on how leprosy is acquired, the newer methods of treatment, evaluation of drugs and also making studies on the characteristics of the leprosy organism.

We have had 36 projects at the Carville Hospital. Twenty-one papers have been published in scientific journals on the research at the Carville Hospital.

Mr. Fogarty. Have you not made some headway down there?

Dr. Miller. Yes, sir, I think they are making good headway in the research program.

Mr. Fogarty. Nothing spectacular?

Dr. Miller. There has been no spectacular break-through on just how leprosy is acquired. That has been a never-ending problem, but they are making some strides along these lines. Some of their work has been in conjunction with the Communicable Disease Center in Atlanta where they have been making some studies in the growth of the organism in the footpad of mice, and that has been very encouraging.

Although there has been nothing really spectacular, there has been some progress made.

Mr. Fogarty. I know this is a much larger problem in many other countries than it is in ours, but what is the outstanding research center in the world on this problem? What center or what country is doing more than this country?

Dr. Miller. The greatest problem with leprosy, the greatest numbers, exist in India, and I think Delhi, India, is the one place where there has been the greatest progress made and the most scientific work done in leprosy.

Mr. Fogarty. You mean in New Delhi?

Dr. Miller. Yes, sir.

Mr. Fogarty. If you walk the streets over there you would not think so.

Dr. Miller. I think there are 6 million persons afflicted with leprosy.

Mr. Fogarty. It seems to me, when I was there, I saw hundreds on the streets.

Dr. Miller. Yes, sir.

Mr. Fogarty. Are they doing more than you are doing at Carville? Have they made more progress than you have at Carville?

Dr. Miller. I think all they are able to do is with respect to treatment, no, sir, I don't think they are with respect to research. I think their principal problem is that of putting out fires and doing the thing that is needed in the way of taking care of the masses afflicted with leprosy.

Dr. Lowry. I think Dr. Miller understated the importance in culturing the leprosy bacillus.

Mr. Fogarty. Someone said at these hearings that something had been accomplished that gave great hopes for the future regarding leprosy. I think I read an article in a magazine about it, too.

Dr. Lowry. I will tell you what the problem is. About 2 or 3 years ago there was reasonable evidence that it was possible to successfully culture the organism in the footpad of mice. They have been very, very conservative with their claims at CDC, and rightfully so, because there have been similar claims in the past. They wanted to be certain that they really could do it. It was only in this last year that Shepherd at CDC felt that the accumulated evidence and his ability to do it repeatedly was such that it could be announced. This is a most significant advance because it opens up the study of the growth of the organism which lets you determine how it grows in the individual, and how it can be reproduced. You can also develop testing mechanisms with drugs in animals instead of doing it only in human beings as we have done it in the past.

Mr. Fogarty. This is the first time this was made possible?

Dr. Lowry. That is correct. I would say this is the most significant advance since the sulphones therapy was developed at Carville Hospital, which is some years ago.

Mr. Fogarty. Many years ago.

Dr. Lowry. That is right. Other than that, from the discovery of the value of the chemotherapy until this time, those are the two most significant.

Mr. Denton. I do not quite understand just what they have discovered.

Dr. Lowry. It has been impossible to grow the leprosy bacillus outside of the human body. However, after many varied attempts, the people at CDC finally discovered a way of growing it in the footpad of a mouse.

MODERNIZATION OF CARVILLE HOSPITAL

Mr. Fogarty. Do you have any other problems down at Carville now? You had several problems there for a few years.

Dr. Miller. In the hearings last year we discussed the pending projects for modernization of the hospital. At that time you asked for a report. This is filed with the full statement, but briefly it brings out a discussion of the quarters for the patients. We had made an effort to bring about a modernization of the quarters and two of the buildings were converted, on a trial basis, into apartments for single and married persons. We are now developing plans for the hospital and some funds have been appropriated in the General Services Administration budget for planning—for continuing the planning and modernization of the Carville Hospital.

Mr. Fogarty. Is this planning program in your full statement that you put in the record?

Dr. Miller. With relation to Carville Hospital? Yes, sir.

Mr. Fogarty. All right. So everything is going along all right. Do you have any holdups anywhere?

Dr. MILLER. We have not yet completed the planning program, and I don't know what holdups there might be, but at the present time I would say that it looks very promising that we will be able to continue with our plans for modernization of the hospital.

OTHER RESEARCH

Mr. FOGARTY. Are there any other accomplishments you want to talk about in your research program?

Dr. MILLER. Well, in our five other major hospitals we have established research departments. The research being done in these hospitals is in cooperation with the Institutes of Health or in cooperation with universities and medical schools. Some research is being done by the research personnel in these hospitals themselves.

During 1961 and 1962, 18 scientific papers were published with respect to research that was done in these hospitals.

Mr. FOGARTY. Where do you get the patients for your clinical research studies?

Dr. MILLER. Most of these are obtained from our normal beneficiary groups that we have in our hospitals, but when certain specific research projects or training projects are conducted, it is necessary for us to have more patients than can be supplied through these normal beneficiary groups. We have obtained these patients under authority of the Public Health Service Act, which permits the admission of patients for special study.

In the leading article in the Journal of the American Medical Association, January 12 of this year, there was a report on heart disease and this was a study which was made at the New Orleans Hospital in conjunction with the Tulane University, a very, very fine article and a very fine study which would not have been possible if these special study patients had not been admitted to the hospital to supplement our other beneficiary groups.

EQUIPMENT

Mr. FOGARTY. I notice in the budget your estimate for equipment has gone down. I thought in the last 5 or 6 years this was one of the real problems, the antiquated equipment that you had in the hospitals. Are you caught up on your equipment needs?

Dr. MILLER. No, sir; we are not caught up.

Mr. FOGARTY. You are asking for 1964 about half what you had in 1963.

Dr. MILLER. We have been reducing our equipment deficit slowly; about $300,000 a year. We had, in the past, been running a deficit of about $3 million. But this year, after the budget ceiling was established, a law was passed increasing the commissioned officers' quarters allowance and there were also some additional wage board increases. It was necessary for us to absorb these somewhere in our budget. We studied it very carefully. As we discussed a few moments ago, I think it is evident that we could not do it by decreasing our drugs and supplies. Our personnel needs are fairly critical and we felt we could not reduce this item, so an administrative decision was made that the only place to take it was from the equipment funds.

Mr. **Fogarty**. It is not good to have a lot of personnel and poor equipment, is it?

Dr. **Miller**. Both are very necessary, Mr. Chairman. There are many areas where our equipment is sorely in need of replacement, but if we don't have the personnel to use the equipment, it is also very critical.

COAST GUARD HEALTH ACTIVITIES

Mr. **Fogarty**. You generally have a statement on the Coast Guard activity, Admiral.

Dr. **Fishburn**. I have no formal statement, Mr. Chairman.

Dr. **Lowry**. This year we were instructed to put the statement into the record.

Mr. **Fogarty**. Does the proposed budget meet the medical and dental needs of the Coast Guard?

Dr. **Fishburn**. The proposed budget increase, Mr. Chairman, provides for increased supplies and local dental and medical care for our geographically isolated units which are the weakest areas in our present medical care program. The Coast Guard has many small units scattered throughout the United States and the world.

REDUCTION IN ORIGINAL REQUEST

Mr. **Fogarty**. Like Providence, R.I.? What did you ask for that you did not get?

Dr. **Fishburn**. We asked for 13 additional positions that we didn't get. Those 13 positions plus the accessory costs associated with those positions represent the main thing.

Mr. **Fogarty**. How much does that come to?

Dr. **Fishburn**. $147,000.

Mr. **Fogarty**. Where would these positions go?

Dr. **Fishburn**. These positions were divided into a number of different categories.

Mr. **Fogarty**. You can supply that for the record.

Dr. **Fishburn**. Yes.

(The information follows:)

COAST GUARD POSITIONS REQUESTED AND NOT ALLOWED BY THE BUREAU OF THE BUDGET, FISCAL YEAR 1964

(*a*) *Medical officer, 3d Coast Guard District, New York, N.Y.*

This officer would serve on the staff of the commander of the district. He would supervise the medical care programs in the area and provide close liaison between the Coast Guard and the medical facilities available to them from PHS and the other uniformed services. He would also serve as the medical member of the Physical Evaluations Board and be available in emergencies to serve aboard vessels requiring a medical officer.

(*b*) *Medical officer, 11th Coast Guard District, Long Beach, Calif.*

This officer would have similar duties to those listed for the 3d Coast Guard District. In addition, he would be expected to participate as required in search and rescue flights by Coast Guard helicopters.

(*c*) *Medical officer, Coast Guard Headquarters, Washington, D.C.*

One position was requested for a medical officer to serve as Deputy to the Chief Medical Officer at headquarters. The Chief Medical Officer is responsible for the planning, direction, and administration of the overall medical, dental, and sanitation program of the Coast Guard. His professional staff consists of one Dental Director and one Sanitary Engineer Director. Due to the lack of a medical officer on his administrative staff, the Chief Medical Officer is bogged down with a myriad of routine duties requiring professional medical decisions and opinions such as reviewing reports of physical examinations, boards of medical survey, physical evaluation boards, and other medical reports. These routine duties seriously reduce the time available for planning and furthering the Coast Guard medical services program which is his primary responsibility. A Deputy is required not only to relieve him of these routine duties but also to have a staff member available who is fully qualified to perform all duties of the Chief Medical Officer during his absence. An experienced medical officer of the Regular Corps is required for this requested position in view of the responsibilities involved.

(*d*) *Medical officer, Coast Guard Air Station, San Diego, Calif.*

One position was requested for a medical officer at this air station which has a busy search and rescue activity. A medical officer is required for a 24-hour basis to participate in frequent flights where the services of a physician are required for the evacuation and treatment in flight of ill and injured persons. When not engaged in rescue activities, he would be available for professional duties in the station dispensary thereby providing medical coverage for the active duty personnel assigned.

(*e*) *Medical officer, Coast Guard Reserve Training Center, Yorktown, Va.*

One position was requested for a medical officer in addition to the one presently assigned. The present medical officer would have been primarily concerned with administrative matters whereas the new medical officer would have served full time in professional duties in the dispensary. This station has a permanent detail of 140 men and has an additional 700 personnel undergoing training at any time with a turnover of 530 trainees every 2 weeks. This total strength and fast turnover generates a considerable workload for required physical examinations and inoculations and outpatient treatments. The Reserve training program is continuously expanding and the workload is increasing accordingly. The point has now been reached where one medical officer cannot carry both the administrative and clinical load. If personnel are sent from Yorktown to the Norfolk PHS Hospital, 2 hours of travel and the loss of one-half man-day for each visit are involved. This is very uneconomical to the Coast Guard, particularly for 2-week active duty personnel. Administrative workload consists of reviewing medical reports, holding boards of medical survey, supervising the station's medical and dental program, including correspondence and reports in connection therewith and making appropriate recommendations to higher authority.

(*f*) *Medical officers* (*2*) *for trainee replacements*

Two positions for junior medical officers were requested to permit replacement for and assignment of medical officers to be selected for training in flight surgery, atomic medicine, and emergency medical care. The Coast Guard medical services program has definite need for personnel with these specialized skills who are not now available.

(*g*) *Active duty training for Reserve officers*

One position and man-year of employment was established to provide for 2 weeks' active duty training for 13 Reserve medical officers and 13 Reserve dental officers on a rotation basis during fiscal year 1964. In the event of mobilization, requirements for USPHS personnel to be assigned to the Coast Guard medical services program will increase considerably. A trained Reserve is essential in order that mobilization planning will be effective and can go into operation automatically.

(*h*) *Dental officer, Coast Guard Base, Curtiss Bay, Md.*

One position was requested for a dental officer to serve full time in professional duties in the dental clinic at the yard in addition to the dental officer presently assigned. The present dental officer has a full workload with routine dental care of personnel assigned to the yard and emergency care of personnel assigned to vessels undergoing availability at the yard. The new position would enable routine dental care to be provided personnel of the vessels undergoing availability at the yard for periods of 4 to 6 weeks. Due to the turnover of vessels, with a total of about 300 personnel, a constant workload would exist, and these personnel would be afforded routine dental care which they are unable to obtain in their home ports due to lack of adequate facilities.

(*i*) *Dental officer, Coast Guard Base, Astoria, Oreg.*

One position was requested for a dental officer to serve full time in professional activities at the Coast Guard Base, Astoria, Oreg. There are 421 active duty personnel in the area who have been without adequate dental care since closing of the U.S. naval station hospital at Astoria in January 1962. The one mobile dental unit in the 13th district is unable to absorb this additional workload. At the present time personnel must be sent to Seattle, Wash., for dental treatment. This requires at least a full day's travel. If dental treatment requires more than one appointment, the trip must be repeated and travel costs and loss of man-hours mount rapidly. Dental examination and treatment of personnel ordered overseas is usually even more costly than routine care due to lack of local facilities. All dental defects must be corrected prior to transfer overseas. This may require treatment over a period of several weeks at Seattle. The district commander has urgently requested establishment of this position and will provide the necessary facilities.

(*j*) *Nurses* (*3*) *Coast Guard Academy, New London, Conn.*

Three positions were requested for civil service nurses, GS–7, at the Academy in accordance with the recommendations of the Chief, Nursing Branch, Division of Hospitals, as a result of a survey of nursing facilities at the Academy during August 1961. These positions are required to meet acceptable standards of patient care and training of nursing personnel. At the present time, staff nurse coverage is marginal to the point of becoming dangerous in the 3 to 11 p.m. shift, during emergencies, and whenever there are critically ill patients in the infirmary. At present, no nursing supervision in the outpatient department is possible during the morning hours. The ward nurses cannot give adequate time to the supervision and training programs of the enlisted hospital corpsmen.

Mr. Fogarty. What areas are weak?

Dr. Fishburn. Areas that we figured required training, particularly in flight surgery.

Mr. Fogarty. Are there any other weak spots?

Dr. Fishburn. I think another weak area is in training, training in atomic medicine, and so forth, which is necessary in order to provide these capabilities for military service. We felt that the original budget would go a long way toward taking care of these emergencies.

Mr. Fogarty. If you do not get what you originally requested, then, you are not going to provide the kind of care that the Coast Guard men ought to have; right?

Dr. Fishburn. I believe that is right, sir. I think the Coast Guard will suffer if we do not.

Mr. Fogarty. Why should the Coast Guard suffer and the Air Force and Army and Navy get pretty much what they want?

TRAINING RESERVISTS

Dr. Fishburn. Well that, Mr. Chairman, is one of the problems. As you know the Coast Guard by proclamation becomes a part of the Navy in time of mobilization or national emergency. It is necessary that we do things comparable to the Navy, at least as far as medical activities are concerned. It is also necessary to have a Reserve program which will be effective. I had neglected to mention that, but that was one of the items that was proposed for this year,a start in the direction of providing Reserve training. We have set up a Reserve program. We have Reserve medical, dental, and sanitary engineer officers assigned to this program to satisfy mobilization needs. Many of these officers have had no military experience and know nothing about the way military medicine is practiced. It is our feeling that there should be a provision for short periods of active duty training for these reservists.

Mr. **Fogarty.** Do you have a plan?

Dr. **Fishburn.** Yes, sir.

Mr. **Fogarty.** Will you put the plan that you have in the record?

Dr. **Fishburn.** Yes, sir.

(The information follows:)

Training Program for Coast Guard Medical and Dental Reserve Officers

The training program would provide for 2 weeks active duty training for 13 Reserve medical officers and 13 Reserve dental officers on a rotation basis during the fiscal year.

In the event of mobilization, requirements for Public Health Service personnel to be assigned to the Coast Guard medical services program will increase considerably. A trained Reserve is essential in order that mobilization planning will be effective and can go into operation automatically. Officers in the Reserve will be available for immediate duty in event of a national emergency. They will be subject to periods of active duty training not to exceed 14 calendar days per fiscal year. Frequency of periods of active duty will depend on previous experience and needs of the service.

Mr. **Fogarty.** Mr. Denton.

REIMBURSEMENTS

Mr. **Denton.** There is an item in your justifications for 1963, "Estimated reimbursements, $7,374,000." Now, what are those reimbursements? What does that embrace?

Mr. **Joel.** Mostly for care in our hospitals of patients of other Government agencies. We conduct health units on a reimbursable basis for any Government agency that desires these services. We also detail physicians to other agencies. This is the major part of it.

Mr. **Denton.** Does the Coast Guard pay you?

Mr. **Joel.** The Coast Guard is an activity in this entire budget and is presented as a direct request.

Mr. **Denton.** Does the Bureau of Prisons pay you?

Mr. **Joel.** We are not concerned in this appropriation with the Bureau of Prisons. They have an allocation in the Department of Justice which takes care of posts that are needed for the Bureau of Prisons.

Mr. **Denton.** They do not pay you that money?

Dr. **Lowry.** Yes, they do pay us. The Bureau of Prisons pays the costs for the services of the personnel that we detail to the Bureau of Prisons.

Mr. **Denton.** That is embraced in that $7 million figure?

Dr. **Lowry.** No, sir.

Mr. **Kelly.** This would largely represent Bureau of Employees' Compensation reimbursements occurring as a result of Federal employees being provided medical care in our hospitals. It would also be made up of reimbursements for medical care for dependents of the military services.

Mr. **Denton.** I was going to ask you about that.

Mr. **Kelly.** Yes, sir.

Mr. **Denton.** For those two items, does the Federal Compensation Board reimburse you for the service you perform as physicians for injured Government employees?

Mr **Joel.** No, the care of injured Government employees in our hospitals is a direct cost in this appropriation.

Mr. Denton. What did you say, Mr. Kelly?

Mr. Kelly. We had changed it and then the committee didn't go along with the change. We treat those as a beneficiary.

Mr. Denton. In this item of $7,374,000 is really what you pay for treatment of the dependents?

Mr. Joel. No.

Mr. Denton. Of commissioned service people.

Mr. Joel. These moneys are paid to us. There are several large groups, such as active duty Armed Forces people, who are near to our hospitals and are treated in our hospitals on a reimbursable basis. There are 215 veteran patients at Fort Worth who get care from us on a reimbursable basis. Such dependents as are near our facilities, of the armed services, who come into our hospitals, are paid for on a reimbursable basis by the Department of Defense and all these moneys come into our appropriation and are made available to us to reimburse us for the expenses of our care for these people.

Mr. Denton. I see. Those are the items that make up the $7,374,000?

Mr. Joel. Yes, sir.

Mr. Denton. And these other items, like the Bureau of Prisons, workmen's compensation—and what was the other?

Mr. Joel. The health units. We run health units for other agencies.

Mr. Denton. The health units you run for other agencies are not in here, but you are paid direct for them?

Mr. Joel. These are also reimbursable.

Mr. Denton. Where is that reflected in the budget?

Mr. Joel. There is a statement of reimbursements available.

Mr. Fogarty. Put them in the record.

(The information follows:)

Reimbursements for 1962, 1963, and 1964, all activities

	1962 actual	1963 estimate	1964 estimate
Veterans	$1,281,516	$1,297,600	$1,285,000
Foreign seamen	464,202	394,200	406,300
Department of Defense	1,001,746	1,095,700	1,109,400
Immigration	10,465	18,200	9,200
Dependents	2,205,559	2,424,700	2,744,500
Other	392,772	435,900	421,500
Coast Guard, U.S. Public Health Service, and Coast and Geodetic Survey officers	16,325	16,700	18,100
Outpatient visits	97,156	97,000	97,000
Miscellaneous	143,000	433,000	476,000
Total hospitals	5,612,741	6,213,000	6,567,000
Other, inpatient and outpatient care	1,583	3,000	3,000
Total, operation of health units	771,243	866,000	886,000
Total, personnel detailed to other agencies	257,211	292,000	293,000
Total reimbursements	6,642,778	7,374,000	7,749,000

SOCIAL SECURITY CONTRIBUTIONS

Mr. Denton. I noticed an increased item here, $14,000 for increasing social security contributions. What does that embrace?

Mr. Joel. The rate of contributions under social security was increased by one-eighth of 1 percent. Now, employees who are not on a permanent basis do not contribute to the retirement fund. They contribute to the social security fund and our matching payments have increased by $14,000.

Mr. DENTON. Where is the main figure reflected in the justifications?

Mr. JOEL. I don't think we have it as a separate figure here. May I supply that for the record?

Mr. DENTON. Yes.

(The information follows:)

Employer's share of Federal Insurance Contributions Act taxes (social security)

	1963 estimate	1964 estimate	Increase
Total, all activities	$213,000	$229,000	$16,000
Mandatory for base positions	213,000	227,000	14,000
Required for new positions		2,000	2,000

Mr. DENTON. Mr. Kelly, why haven't we run into this before? That is the first time we hit that.

Mr. KELLY. Very few of the accounts have as many employees as this account does, with 7,000 employees, and therefore very few of the accounts have as many employees that are subject to social security payments. Out of the total departmental staff, there are relatively few that are subject to social security. Most of our employees are subject to retirement, but in every account there are a few. In this particular account it amounts to more than normal.

Mr. DENTON. I never saw that in the Forest or Park Service. Maybe I overlooked it. I would think they would have a tremendous amount more than you have of this kind of employees.

Mr. KELLY. I don't know.

Mr. JOEL. You might strike it in old-age and survivors insurance. This account comes later. I don't know about the Forest or Park Service. But we do have temporary employees who help in peak periods and for that reason we have a greater number than any permanent staff appropriation would have.

CROWDED OUTPATIENT FACILITIES

Mr. DENTON. About the service that you perform for the dependents of the military personnel or the commissioned services, when I was at one of your hospitals you did not have the facilities to take care of outpatients. They were waiting in corridors all over the hospital. Have you done any thing to correct that situation?

Dr. MILLER. This is one of our problems, Mr. Denton. The explosive increase that we have had in the number of outpatient visits to our hospitals has been a serious problem to us because our hospitals were not constructed for these large outpatient requirements, so this has caused a very serious overcrowding which we are hoping we can get corrected as quickly as possible. Our hospitals have set up an appointment system; they have done everything they can do administratively to try to correct this. But physically, it is still a very serious problem.

Mr. Denton. I went through these hospitals and these dependents were waiting in chairs all up and down the corridors on the first floor. It seemed to me that you ought to be able to set aside some room where they could wait.

Dr. Miller. We try to utilize every possible square inch of space we have and it is something we are constantly trying to improve.

CARVILLE HOSPITAL

Mr. Denton. One thing I was surprised at: While you did not say it was running behind, you did not think that Carville was one of the leading hospitals in research for Hansen's disease. When I was down there I got the impression that it was certainly one of the very top ones, because there were two superintendents of leprosariums in other countries who were down there studying and it was down there that they established or discovered sulfones. It was one place where they were curing people of leprosy. At least they were in a position where they could leave the reservation and be under supervised treatment after they left. I got the impression you were making great strides forward.

Dr. Miller. I am happy you asked that question, Mr. Denton, because I did not mean in any sense to give the impression that Carville is not a leading hospital in research and in education. The Carville Hospital has been rapidly developing into a center where, internationally, scientists and physicians interested in leprology have been coming in large number to observe the work that we are doing and to participate in educational seminars. I believe that our research program at the Carville Hospital is rapidly developing into one of the outstanding ones of the world, and I did not mean to give the impression that it is not because I believe it is, sir.

Mr. Denton. I am glad to hear that. Have you gotten rid of those old officers quarters down there? I will tell you, they are old, wooden buildings. I ate meals in them when I was stationed at Kelly Field in World War I. When I got down there I thought they outlived their usefulness. These are these old, wooden buildings. Anybody who ever saw them would never forget them.

Dr. Miller. We still have some of those old buildings. We are hoping that in our new plans, which we are now developing in the form of program plans, these will be considered with the other physical structures of the hospital in the total modernization problem.

Mr. Denton. They were built in 1917?

Dr. Miller. Yes, sir.

Mr. Denton. And were the messhalls at Kelly Field No. 2? I think men down at a place like that are entitled to better living quarters than those buildings and I certainly think something ought to be done to replace those buildings with modern buildings for those people who live down there.

Dr. **Miller**. We deeply appreciate your interest and we thoroughly agree with you.

Mr. **Denton**. I was interested in the buildings because I thought they had long outserved their usefulness. Nobody could ever miss them.

Dr. **Miller**. No.

Mr. **Denton**. I think that is all.

Mr. **Fogarty**. Mr. Laird.

OBSTETRICS SERVICE

Mr. **Laird**. Doctor, I would like to find out, if I could, the breakdown of obstetrics service in these 12 general hospitals. How many obstetric patients do you have.

Dr. **Lowry**. I might say while he is getting that, the obstetrical service is only at the Staten Island hospital and New Orleans hospital. Just the 2 of them, and I think the figures will run about 500 births per year in each place.

Dr. **Miller**. Mr. Laird, we have obstetrical services in two hospitals, Staten Island and New Orleans. I do not have available with me the number of admissions or the average number of patients, but I shall be very happy to supply those for the record.

(The information follows:)

Admissions to obstetrics service during fiscal year 1962

New Orleans	535
Staten Island	424

PEDIATRICS SERVICES NEEDED FOR ACCREDITATION

Mr. **Laird**. I want to follow through on the justification of these proposed pediatrics units.

Dr. **Miller**. Yes, sir, I understand. We are contemplating establishing a pediatric service at the Staten Island hospital where we do have an obstetrical service, but it supplies obstetrical training for only about one-third of our interns. The rest of them receive it on the outside, at other hospitals and universities in the New York area. So we are unable to supply the training needs for the interns in obstetrics or pediatrics at the Staten Island hospital and the reason for our establishing pediatric service at this hospital is not only to take care of the heavy load of children who come to our outpatient department and who seek admission to the hospitals, to meet the need of the sick children, but to meet the need of the internship training where we do not have sufficient obstetrics or pediatrics to supply the training needs.

Mr. **Laird**. I thought you mentioned you were going to put pediatrics at San Francisco.

Dr. **Miller**. That was the metabolic research ward at San Francisco.

Mr. **Laird**. Where are you going to put these pediatrics units?

Dr. MILLER. The three units that are to be established are at the Boston, Norfolk, and Staten Island hospitals.

Mr. LAIRD. You have no obstetrics service in Boston now?

Dr. MILLER. We have no obstetrical service there now nor do we have any at Norfolk?

Mr. LAIRD. How are these children being taken care of now?

Dr. MILLER. When ill children come into the hospital, and they are in acute need of hospitalization they are cared for in private rooms of the hospital and ofttimes it is necessary to request the parents to come in and be with the children part of the time.

Dr. LOWRY. The majority of the children have to go to private hospitals. These are the same children that are eligible for medical care. If they have to be hospitalized, they can go to another hospital.

Mr. LAIRD. These are children of commissioned Public Health Service personnel and Coast Guard dependents?

Dr. LOWRY. And the armed services. Any medicare beneficiaries.

Mr. LAIRD. What I am trying to figure out is, Do you have the need for this or can it be handled in other hospitals? In some of the medical schools, medical students are getting their obstetrics training in general hospitals and other hospitals in the general area, and also pediatric training.

Dr. LOWRY. Part time, Mr. Laird. Before you came in we explained that the Council of Education has hospital training in four areas. Three of those had to be in the parent hospitals. This is what we have been doing in the past, getting them in our hospitals and obstetrics and pediatrics in a university hospital nearby. Now we have been told that unless we supply three of the four in our own hospitals, our accreditation will be withdrawn. It would have been withdrawn last December if we hadn't come up with a definite proposal. If we lose the accrediting internship we lose our recruiting.

Mr. LAIRD. You have internship in these other hospitals?

Dr. LOWRY. This is the problem, we have to meet the three out of four wherever they are.

Mr. LAIRD. You are not meeting it in this budget.

Dr. MILLER. Mr. Laird, we have established a pediatrics unit at our Baltimore and Seattle hospitals. Since the New Orleans hospital has an obstetrical service, pediatrics isn't required. We may need it later but it is not required at this time for the training of interns. These will supply the needs for pediatric services to satisfy the training programs for interns.

Mr. LAIRD. Let's take one of them now. Take Norfolk. You have no obstetric service there at present?

Dr. MILLER. No, sir.

Mr. LAIRD. Where do they go, to the Navy?

Dr. MILLER. Yes, sir; most of them are medicare patients and they are supplied to the Navy hospital in Norfolk.

Mr. LAIRD. You have an intern program in Norfolk?

Dr. MILLER. Yes, sir.

Dr. Lowry. The interns go to the Navy to get their obstetrics.

Mr. Laird. And they object to that unless you have pediatrics?

Dr. Lowry. They can still continue to get the obstetrics at the Navy hospital, the interns.

Dr. Miller. They do not object to the interns going to the Navy hospital for obstetrics, Mr. Laird, but we must supply three of the four major training programs at our own hospital and so it would not be possible for us to send them to the Navy hospital for both obstetrics and pediatrics, and since we have no obstetrical service, and it is much more simple and economical to establish a pediatric ward, we wish to establish the pediatric service.

Mr. Laird. What do you estimate you will have as a patient load there?

Dr. Miller. We are planning to establish a ward where we can maintain an average load of approximately 15 patients. They are planning to set up approximately 20 beds. That is, for inpatients. In addition to this, of course, with this program, they have a large outpatient service including well-baby clinics.

Mr. Laird. Most of it is outpatient with pediatrics, is it not?

Dr. Miller. Most of it is, but the pediatric ward that we must establish is for the care of the acutely ill children who must be brought into the hospital for inpatient care which is a part of the necessary program of internship training in pediatrics. This is the part that we need to supply. We already are supplying a considerable amount of outpatient care in pediatrics, but it is necessary that we also have inpatient care for the acutely ill baby in order to satisfy the needs of the Joint Commission on Accreditation and the Council on Medical Education.

Mr. Laird. That is all.

Mr. Fogarty. Is there anything else you would like to say, Dr. Miller?

Dr. Miller. I appreciate your interest, Mr. Chairman, and that of the other members of the committee.

Mr. Fogarty. Is there anything you want to say, Dr. Fishburn?

Dr. Fishburn. We appreciate your support.

Mr. Fogarty. Thank you very much.

We will now take up the Foreign Quarantine Service and then recess until 1:30.

THURSDAY, MARCH 7, 1963.

FOREIGN QUARANTINE ACTIVITIES

WITNESSES

DR. JAMES G. TELFER, CHIEF, DIVISION OF FOREIGN QUARANTINE
RALPH E. RIGGS, DIVISION BUDGET OFFICER
DR. RAY H. VANDERHOOK, DEPUTY CHIEF, DIVISION OF FOREIGN QUARANTINE
DR. JAMES V. LOWRY, CHIEF, BUREAU OF MEDICAL SERVICES
DR. LEO J. GEHRIG, DEPUTY CHIEF, BUREAU OF MEDICAL SERVICES
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
PUBLIC HEALTH SERVICE			
11 Personnel compensation:			
Permanent positions	3,851	4,321	4,598
Positions other than permanent	36	30	40
Other personnel compensation	243	230	287
Total personnel compensation	4,130	4,581	4,925
12 Personnel benefits	367	396	437
21 Travel and transportation of persons	186	195	188
22 Transportation of things	73	95	101
23 Rent, communications, and utilities	106	104	804
24 Printing and reproduction	32	29	29
25 Other services	212	361	457
26 Supplies and materials	119	105	121
31 Equipment	57	65	74
42 Insurance claims and indemnities	3		
Subtotal	5,285	5,931	7,136
Deduct quarters and subsistence charges	20	20	20
Total, Public Health Service	5,265	5,911	7,116
ALLOCATION TO DEFENSE—CIVIL, ARMY			
25 Other services	20	31	
32 Lands and structures	543	140	
Total, Defense—Civil	563	171	
Total obligations	5,828	6,082	7,116

Personnel summary

	1962 actual	1963 estimate	1964 estimate
PUBLIC HEALTH SERVICE			
Total number of permanent positions	656	668	694
Full-time equivalent of other positions	12	10	12
Average number of all employees	610	630	652
Number of employees at end of year	644	656	683
Average GS grade	8.0	8.0	8.1
Average GS salary	$6,564	$6,963	$6,980
Average salary of ungraded positions	$4,989	$4,941	$4,943

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
Quarantine and visa medical examination activities (program costs, funded)[1]	5,854	6,082	7,116
Change in selected resources [2]	−26		
Total obligations	5,828	6,082	7,116
Financing:			
Unobligated balance brought forward (−)		−171	
Unobligated balance carried forward	171		
Unobligated balance lapsing	83		
New obligational authority	6,082	5,911	7,116
New obligational authority:			
Appropriation	6,084	5,892	7,116
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (75 Stat. 353) (−)	−2		
Appropriation (adjusted)	6,082	5,892	7,116
Proposed supplemental due to pay increases		19	

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[1] Includes capital outlay as follows: 1962, $620,000; 1963, $236,000; 1964, $83,000.

[2] Selected resources as of June 30 are as follows:

	1961	1962 adjustments	1962	1963	1964
Stores	38		6	6	6
Unpaid undelivered orders	79	2	87	87	87
Total selected resources	117	2	93	93	93

General Statement

Mr. Fogarty. Dr. Telfer, do you have a statement for the committee?

Dr. Telfer. Mr. Chairman and members of the committee, I am happy to be here for the Division of Foreign Quarantine. I have a statement and with your permission I would like to summarize it.

Mr. Fogarty. All right; put the statement in the record and then you may summarize it.

(The statement referred to follows:)

Mr. Chairman and members of the committee, the Division of Foreign Quarantine performs one of the major responsibilities of the Public Health Service—protection of the United States against the importation of diseases. This is accomplished by (1) inspections at ports of entry and the application of measures to prevent the introduction into this country of serious communicable diseases and their vectors from abroad and (2) the medical examination of applicants for visas at designated consulates abroad and medical inspections at ports of entry in this country to prevent the entrance of any alien with a disease or medical condition which is excludable by law or which adds to the problem of disease control or creates a burden of institutional or economic support of the alien.

WORLD PREVALENCE OF QUARANTINABLE DISEASE

No human case of quarantinable disease was reported in the United States during 1962. (The incidence of the smallpox threat of last August is discussed later in this statement.) The following world prevalence data is related to the calendar year 1962, unless otherwise indicated.

Smallpox

Great reservoirs of smallpox infection remained present in the world. Over 58,000 cases were reported by 56 countries during the year. Of these, 17 were countries in which the disease was imported, and in 10 of these there were resultant outbreaks. Thirty-seven cases were reported on board ships during the year.

This situation, coupled with increased international travel at greater speeds, and with increased mixing of traveling populations, contributed to the increase in the threat of the introduction of smallpox into the United States.

It is now 15 years since an outbreak of smallpox has occurred in the United States.

Cholera

In addition to the endemic areas of India and Pakistan, cholera raged epidemic through the Philippines, Taiwan, Hong Kong, Sarawak, North Borneo, west New Guinea, and Indonesia in 1962. Over 8,200 cases with 196 deaths were reported in the Philippines alone. Nearly 30,000 cases were reported worldwide, including 3 cases on shipboard.

In the United States, the Division of Foreign Quarantine continued the maintenance of cholera vaccination requirements for travelers from infected areas, and strengthened measures to prevent entry of infected items, and measures to isolate suspects, particularly those arriving by air. No cholera was imported.

Yellow fever

The yellow fever virus remained present throughout wide forested areas of South America and Africa. Presence of the virus is determined by surveys of animals, by epidemics among monkeys, and by spread to human beings. Most of the human cases occurred in rural areas, and only a portion of these received definitive diagnosis and were reported internationally. During 1962 there were 51 such cases reported, nearly all fatal. There are continued threats of explosive outbreaks such as that in southwest Ethiopia, with over 3,000 deaths reported in 1961.

Plague

Plague remained endemic, with occasional human cases, in Ethiopia, Vietnam, and India, and outbreaks of bubonic plague were reported in Ecuador, Madagascar, and South-West Africa. Almost 1,200 cases were reported, worldwide. No human cases were reported in the United States although the disease remains endemic in wild rodents in isolated areas of some Western States.

Typhus

Epidemic typhus was present in Ecuador, Peru, South Africa, Ethiopia, Egypt, Afghanistan, Korea, Turkey, Bulgaria, and Yugoslavia during the year. Nearly 4,300 cases were reported worldwide.

Relapsing fever

Relapsing fever was present in Ethiopia and Sudan. Over 3,300 cases were reported.

THE QUARANTINE FUNCTION

The quarantine function (the inspection and the application of preventive measures at U.S. ports of entry) is performed at over 300 continental and insular locations in the United States and its possessions.

The volume of international traffic is expected to continue to increase. Established transportation facilities are being expanded and improved and new facilities are being added. As a consequence, the Division of Foreign Quarantine work volume will continue to grow. In fiscal year 1962, about 6.1 million aliens and returning citizens subject to quarantine inspection arrived in the United States. It is estimated that this figure will approximate 6.6 million persons in 1964. Air passengers will account for most of this increase.

No major change is foreseen in passenger traffic by vessel or in the number of persons entering the United States by land from Mexico.

The quarantine workload at major airports handling international travel continues to grow larger. This increase and the greater speed in transportation enlarges the danger of introduction of the quarantinable diseases. Disease endemic in any part of the world can now be brought to our country within hours. New techniques, improved communications, and constant vigilance are required to insure the continued protection of this country.

In 1962, smallpox vaccinations were given at ports of entry into the United States to approximately 667,000 persons who did not present valid vaccination certificates. It was necessary to detain for medical observation 65 persons arriving in the United States ports of entry because of possible recent exposure to a quarantinable disease. Some 329,000 incoming travelers, or 5.4 percent of the total, were allowed to continue to their destinations in the United States, but were required to be under temporary surveillance. Of these, a small percent were issued surveillance orders which resulted in close observation by local health authorities. The great majority of travelers to the United States comply with our immunization requirements in a cooperative manner.

Last August an incident occurred which demonstrates both the danger which confronts us and the measures which we have developed to combat a smallpox threat. A 15-year-old Canadian boy and his family arrived at the New York International Airport en route from Brazil to Canada. There were 83 passengers and crew on the airplane. All were normally processed through quarantine and the boy and his family presented validated smallpox vaccination certificates of a Brazilian local health department. It was later determined that the boy had not been revaccinated even though the recently issued certificate stated that he had. Later reports from the plane crew, U.S. quarantine inspectors, the boy and his father indicated that the boy showed no signs of illness during the flight nor while going through the health inspection at the airport. Although the boy and his family were inspected and showed no signs of illness each was given a surveillance notice which advises that if the traveler becomes ill within 14 days he should report to a physician or local health authority and show the notice. This in turn alerts the physician that smallpox, among other things, should be suspected or looked into. The boy and his family proceeded to Grand Central Station and during the wait of several hours for a train connection to Toronto the boy became ill. The boy was seen by a physician on the following day in Toronto and was diagnosed as having chickenpox. His father did not show the surveillance notice to the physician. Five days later he was hospitalized as suspect smallpox. On the following day Canadian quarantine authorities notified us of the clinical diagnosis of smallpox and this was subsequently confirmed by laboratory study.

In the 7 days which had elapsed from the time the boy had been cleared in New York the other passengers and the crew of the airplane had, of course, become widely dispersed. The Division of Foreign Quarantine and the Communicable Disease Center immediately began a search for these people.

All but two were found, promptly revaccinated, and placed under strict surveillance. The missing two are believed to have departed for other countries soon after arrival. All other possible contacts at the airport, the railroad station, and on the train to Toronto were alerted to obtain vaccinations and report any sign of illness. Local health authorities in New York City and cities along the train route set up vaccination clinics and vaccinated thousands of persons who had reason to believe that they might be possible contacts. The New York Quarantine Station urged all persons employed at the airport to be vaccinated or revaccinated. (Incidentally one of our continuing protection procedures is the encouragement of maintenance, through annual vaccinations, of high levels of immunity among employees at all international ports of entry.)

Strict surveillance of known contacts in about 30 cities in the United States continued through 16 days from the date of exposure. No known secondary cases developed in the United States or Canada even though several suspect rash cases were closely watched.

Although press inquiries were numerous in Washington and New York and the news coverage was extensive, there was no panic evidenced among the population at any time.

The yellow fever mosquito (*Aedes aegypti*) control program is being continued by the Division of Foreign Quarantine in the international traffic centers of the yellow fever reception area in the southern part of the United States, and in Puerto Rico, Hawaii, and the Virgin Islands.

PREVENTING INTRODUCTION OF COMMUNICABLE DISEASES

In addition to the responsibilities for prevention of importation of the quarantinable diseases in accordance with international agreement, the Division program includes measures for control of the introduction into the United States of significant communicable diseases.

Among those travelers arriving at U.S. ports of entry in 1962 were individuals who were found to have one of the following communicable diseases: chancroid, chickenpox, gonorrhea, hemolytic streptococcal diseases, impetigo, keratoconjunctivitis, leprosy, lymphogranuloma venereum, measles, mumps, poliomyelitis, ringworm of the scalp, salmonellosis, syphilis, tuberculosis, and whooping cough.

There has been continuing progress in the elimination of rats from vessels. Progress is being made on improving food handling and water supplies on international vessels and planes.

THE ALIEN EXAMINATION PROGRAM

The Public Health Service Act specifies that the Surgeon General of the Public Health Service shall provide for making, at places within the United States or in other countries, such physical and mental examination of aliens as are required by the immigration law to prevent mentally and physically defective aliens from entering the United States.

Public Health Service examinations at consulates abroad

Examining units are established at most of the large visa-issuing posts in Europe, Canada, and Mexico which process the majority of immigrants to the United States. These units, staffed either by Public Health Service officers or local physicians employed and supervised by the Public Health Service, conducted medical examinations for more than 189,000 visa applicants at 22 of the principal American consular offices abroad and at stations along the Mexican border.

During the year, nearly 63,000 notifications of significant physical or mental conditions were made to consular officials. Of this number approximately 1,800 visa applicants were found to have conditions which by law are excludable from the United States. An additional 18,000 applicants were found to have conditions which might have affected their ability to earn a living in the United States, and 43,000 were found to have diseases or physical defects of less serious nature.

At American consular offices where Public Health Service peronnel are not available, visa applicants are examined by local physicians selected by the Department of State. In 1962 approximately 130,000 applicants were examined by these physicians. At the request of the Department of State, Public Health Service medical officers provide consultative supervision of these physicians in some localities. The Division is establishing in 1963 an examination and supervisory office to serve the Caribbean and Central American areas.

In December 1961 the State Department initiated a fee of $10 for each medical examination of a visa applicant performed by a physician employed by the Public Health Service (except nonimmigrants under U.S. Government sponsorship and refugees or escapees). These fees will produce enough to cover the cost of the medical examination program in 1964.

Public Health Service medical inspections at ports of entry

All aliens, including immigrants, are medically inspected at U.S. ports of entry by Division of Foreign Quarantine personnel in accordance with provisions of the Immigration and Nationality Act. The number of the inspections increased from 3.1 million in 1961 to 3.3 million in 1962. It is estimated that the workload will increase to 3.7 million in 1964.

Of the aliens medically inspected at U.S. ports of entry in 1962, nearly 57,000 (excluding 600 admitted under excludable disease waiver) were found to have conditions reportable to the Immigration and Naturalization Service. Of this number almost 24,000 were found to have diseases or defects which affected their ability to be economically self-sustaining in the United States and 33,000 had conditions of lesser importance. More than 2,500 of this group were first found to be excludable from the United States at the port of entry. These were for the most part Mexican border crossers or alien seamen, since excludable immigrants are generally discovered at the time of the application for a visa and before departure for the United States.

REQUIREMENTS FOR 1964

An amount of $7,116,000 is requested to carry out the responsibility of the Division of Foreign Quarantine to protect this country against the introduction of diseases from abroad.

The 1964 estimate provides a net increase of $1,205,000 over 1963: mandatory requirements account for $228,000 of this increase and program increases, $1,039,500.

Included in the mandatory increases is the cost of the Federal Employee Pay Act, 2 additional days' pay in 1964, and other costs.

The program increase of $1,039,500 will provide for—

One position and costs for the program for prevention of introduction of diseases from abroad. This will provide a program officer for direct planning and analysis of the quarantine function, for the purchase of smallpox vaccine and purchase of a house trailer for use at the Lukeville, Ariz., Quarantine Station ($31,100).

Funds for rental of PHS-occupied space at international airports as authorized by Public Law 87–255. The budget estimate is based on the application of a uniform per-square-foot cost to total space requirements for each of the Federal inspectional agencies utilizing space at the airports—Foreign Quarantine, Agriculture, Customs, and Immigration and Naturalization Service ($660,000).

Twenty-five positions and funds for the visa medical examination program. This increase will permit us to establish two new medical examination facilities; augment the staff at existing units; improve the quality of the examinations performed; and to provide direct administration of the program activity ($348,400).

Dr. TELFER. Mr. Chairman and members of the committee; the Division of Foreign Quarantine carries out one of the major responsibilities of the Public Health Service—the protection of the United States against the importation of disease. This is accomplished by the medical examination of applicants for visas at consulates abroad and by medical inspections of persons and things at ports of entry into this country.

QUARANTINABLE DISEASES

During the past year no quarantinable disease was introduced into the United States.

The quarantinable diseases—smallpox, plague, yellow fever, cholera, typhus, and relapsing fever—are endemic and epidemic in large areas of the world. Increased speed of air travel brings the possibility of an epidemic of these diseases closer to countries in which they have either been eradicated or have not occurred. Both smallpox and cholera were transmitted from one country to another by international travelers in 1962. Cholera was epidemic in the Philippines and other Pacific Islands. Over 58,000 cases of smallpox were reported in 56 countries, including 17 countries in which the disease was imported.

Last year 329,000 persons entering this country were placed under temporary surveillance, smallpox vaccinations were given to 667,000 persons who did not present valid vaccination certificates, and it was necessary to detain 65 persons for medical observation.

INTERNATIONAL TRAFFIC

It is estimated that the volume of international traffic will continue to rise. In fiscal year 1964 it is estimated that 6.6 million persons, an increase of some 500,000 over 1962, including both aliens and returning citizens, will be inspected for quarantine on arrival at ports of entry into this country. This increase will be largely accounted for by arriving air passengers and a significant portion will be from areas where quarantinable diseases exist.

The yellow fever mosquito (*Aedes aegypti*) control program is being continued by the Division of Foreign Quarantine in the international traffic centers of the yellow fever receptive areas in the southern part of the United States, and in Puerto Rico, Hawaii, and the Virgin Islands.

There has been continuing progress in the elimination of rats from vessels. Progress is being made on improving food handling and water supplies on international vessels and planes.

VISA MEDICAL EXAMINATIONS

In the visa medical examination program of the Division of Foreign Quarantine, operated at 22 consulates abroad and at stations along the Mexican border, 189,000 visa applicants were medically examined by PHS physicians and PHS employed and supervised local physicians. Nearly 63,000 persons examined were found to have conditions requiring notification to the consulates. Approximately 1,800 had diseases such as mental deficiency, epilepsy, leprosy, tuberculosis, and severe emotional disorders which are excludable under the provisions of the Immigration and Nationality Act. Over 18,000 were found to have medical conditions which might affect the ability of the applicant to earn a living, and 43,000 were found to have other minor conditions.

At consulates abroad where there are no Division of Foreign Quarantine staff, approximately 130,000 aliens were medically examined by foreign physicians selected by the Department of State. Division of Foreign Quarantine physicians provide supervision of those foreign physicians in certain localities.

In December 1961 the State Department initiated a fee of $10 for each medical examination of a visa applicant performed by a physician employed by the Public Health Service—except nonimmigrants under U.S. Government sponsorship and refugees or escapees. These fees will produce enough funds to pay the cost of the visa medical examination program.

A total of 3.3 million aliens were medically inspected last year at ports of entry into the United States in accordance with the provisions of the Immigration and Nationality Act. This includes those mentioned above who were previously examined abroad for visa issuance purposes as well as visitors, foreign seamen, students, and some others.

INCREASES REQUESTED FOR 1964

An amount of $7,116,000 is requested to carry out the responsibility of the Division of Foreign Quarantine to protect this country against the introduction of diseases from abroad.

After eliminating nonrecurring costs the 1964 estimate provides a net increase of $1,205,000 over 1963. Built-in requirements account for $228,000 of this increase, and program increases $1,039,500.

Included in the mandatory increases is the cost of the Federal Employee Pay Act, 2 additional days' pay in 1964, and other costs.

The program increase of $1,039,500 will provide for one position and costs for the program for prevention of introduction of diseases from abroad. This will provide a program officer for direct planning and analysis of the quarantine function, for the purchase of smallpox vaccine, and purchase of a house trailer for use at the Lukeville, Ariz., Quarantine Station; $31,100.

Funds for rental of PHS occupied space at international airports as authorized by Public Law 87–255: The budget estimate is based on the application of a uniform per square foot cost to total space requirements for each of the Federal inspectional agencies utilizing space at the airports—Foreign Quarantine, Agriculture, Customs, and Immigration and Naturalization Service; $660,000.

Twenty-five positions and funds for the visa medical examination program: This increase will permit us to establish two new medical examination facilities, augment the staff at existing units, improve the quality of the examinations performed, and provide direct administration of the program activity; $348,400.

This summarizes my statement, Mr. Chairman, and I will be pleased to answer any questions.

Mr. FOGARTY. Thank you.

RENTAL OF SPACE AT INTERNATIONAL AIRPORTS

The appropriation for 1963 including the pay act supplemental is $5,911,000 and the request for 1964 is $7,116,000, an increase of $1,205,000 and 26 positions. Over half of the increase is $660,000 for rental of space at international airports. Why is this necessary?

Dr. TELFER. Mr. Chairman, the Congress has passed Public Law 255 of the 87th Congress, which provides for appropriation of sums to allow the Government inspection agencies to pay rentals for the space they use at public airports.

Mr. FOGARTY. Is this the law that was passed in September 1961?

Dr. TELFER. Yes.

Mr. FOGARTY. Why wasn't the request included in the 1963 budget?

Dr. TELFER. Mr. Chairman, the request is placed within our budget at the suggestion of the Bureau of the Budget and——

Mr. FOGARTY. I was wondering why you did not make some request for 1963.

Mr. KELLY. This is because it was decided that there should be a Government-wide policy, Mr. Chairman, coordinated by the Bureau of the Budget. We advised them that we wanted guidance on it and the decision was made not to include it in 1963. They have subsequently negotiated the policy and advised all agencies as to the cost per square foot that they were to include in the budget for 1964.

Mr. LAIRD. Mr. Chairman.

Mr. FOGARTY. Yes, sir.

Mr. LAIRD. What would happen if we denied these funds?

Mr. KELLY. The law, insofar as foreign quarantine is concerned, would not be implemented, and we would not make payments to the international airports where we occupy space.

Mr. LAIRD. It seems to me that this is a service that we are now providing to them and it is pretty important for these airports to have this service. They would have to shut up, if they did not.

Mr. KELLY. They could not be established as an international airport if they did not have the quarantine inspection.

Mr. FOGARTY. This is not a mandatory law though, is it?

Mr. KELLY. I don't think so. No, sir.

Mr. FOGARTY. It is permissive?

Mr. KELLY. It is permissive, yes, sir. It is being applied, as I understand it, uniformly, to all.

Mr. FOGARTY. Was a considerable amount of Federal money used to build these airports?

Mr. KELLY. I would suppose that in a large proportion of the international airports there was a Federal subsidy—about 50–50.

Mr. Fogarty. I am sure some of them, for instance the new Dulles Airport is not a 50–50 proposition.

Mr. Kelly. That is a Federal airport, sir.

Mr. Laird. The people that are using these services should be paying for it in landing fees instead of charging the general taxpayer for these things.

VISA MEDICAL EXAMINATIONS

Mr. Fogarty. The only other sizable increase is $348,000 and 25 positions for medical examinations of visa applicants. Where will these people be stationed, and why do you need them? And tell us something about the success of this program.

Dr. Telfer. Mr. Chairman, presently about 326,000 immigrant aliens enter the country each year, and about 60 percent of this number are medically examined by the Public Health Service, in accordance with the stipulations of the Public Health Service Act.

About 40 percent of the immigrants are now examined by private physicians, who are named by the Department of State officers in the local areas of the consulate.

Mr. Fogarty. Are they local?

Dr. Telfer. They are local physicians, sir, and the Department of State asks us for more supervision. They say that they, not being physicians, have a considerable problem in determining which physicians to name, and they have great difficulty in seeing that the examinations are carried out properly.

We do visit some of these panel physicians in areas where we have enough strength in our own offices to make the visits to the other office.

For instance, in our office in Paris, we visit the Embassy in Madrid and we give some supervisory consultation to the panel physicians that are employed in Madrid. However, we do not have an authority over these physicians. We merely act as consultants to the Department of State.

Now, as you know, sir, we do have examining offices in certain foreign cities within this budget for 1964. We propose to increase this number by two. These will be located at Monterrey, Mexico, and at Manila, Philippine Islands.

Mr. Fogarty. Well, what are these 25 positions for?

Dr. Telfer. Seven of those positions, sir, will be for the two new units.

Mr. Fogarty. What two units?

Dr. Telfer. That are to be in Monterrey and Manila.

Mr. Fogarty. These will be your physicians?

Dr. Telfer. They will be employed by us, sir. They will not all be Americans.

Mr. Fogarty. No. I understand.

Dr. Telfer. Fifteen of the positions will be for strengthening the existing units.

Mr. Fogarty. Your own units?

Dr. Telfer. Our own units. Would you care for me to name these places?

Mr. Fogarty. Put them in the record.

(The information follows:)

Increases at existing visa examination units

Location:	Number of positions	Location—Continued	Number of positions
Montreal	3	Winnipeg	2
St. John	2	Athens	1
Toronto	1	Palermo	1
Vancouver	1	Rotterdam	2
Windsor	2	Total	15

Mr. FOGARTY. What are the other three?

Dr. TELFER. The other three are for administrative support to the foreign operations program.

Mr. FOGARTY. This is working out pretty well, is it not?

Dr. TELFER. Well, we feel this is the only method that provides a completely adequate and satisfactory examination.

FINANCING EXAMINATION OF VISA APPLICANTS PROGRAM

Mr. FOGARTY. How near is this overall program of examination of visa applicants self-supporting?

Dr. TELFER. It is entirely self-supporting now.

Mr. FOGARTY. Will you tell us how it works?

Dr. TELFER. The Department of State consular offices collect a fee of $10 for every visa applicant medically examined by us, with a few exceptions, such as students who are coming in under U.S. Government sponsorship; refugees; and escapees.

The money is collected by the Department of State. It goes into the Treasury of the United States, and we, in turn, receive our money for the activity through the appropriation asked for.

Mr. FOGARTY. How much is this? How much are you spending on this overall program?

Mr. RIGGS. The 1964 budget provides $1,394,000.

Mr. FOGARTY. Let's get a 1962 figure or a 1963 figure. How much was spent and how much was returned to the Treasury?

Mr. RIGGS. I don't have the 1962 figure with me. I can furnish that for you.

Mr. FOGARTY. The last year that you have. You would not have 1963? You can get the 1962 figure, can you not?

Will you supply that for the record?

Mr. RIGGS. Yes, sir.

(The figures follow:)

Medical examination of visa applicants, fiscal year 1962

Public Health Service costs	$635,000
State Department collections from Dec. 1, 1961, through June 30, 1962	886,200

SMALLPOX VACCINATION PROGRAM

Mr. FOGERTY. What is this smallpox vaccination program for which you want $12,000?

Dr. TELFER. Mr. Chairman, this is to implement our existing program for increasing the defense that we have against smallpox coming into the country. We promote vaccination among the people who are particularly likely to come into contact with the international travelers—the people that work in seaports and airports.

Mr. Fogarty. This is just the protection of your own employees?

Dr. Telfer. No, sir. This is the protection of all the Government inspectional agency and other people—people who work in the airports and seaports.

Mr. Fogarty. Oh, I see.

Dr. Telfer. And we do this largely through encouraging the local health departments, the employees' organizations, and the companies that employ people. We have difficulty in getting everyone covered. We feel that with this supply of vaccine we can so encourage the program that we will have much better success.

INCREASE FOR PROGRAM PLANNING AND ANALYSIS

Mr. Fogarty. You have a request for funds to hire a grade 14 employee who is to be, in the words of your justification, "A staff advisor on program planning and program analysis."

What will this person do that could not be done by you and your regular staff with years of experience in this program?

Dr. Telfer. Sir, at the present time, our staff are attempting to do all these things. We find great difficulty. We are an extremely busy office. We have a great deal of day-to-day problems in our offices, that tie us up much of the time and we feel that we really need a specialist in this program analysis and evaluation who can come in and remain aloof from all the fires that we are fighting, in day-to-day problems, and concentrate on this.

OVERTIME FOR CONTRACT PHYSICIANS

Mr. Fogarty. Two years ago when I was in Puerto Rico, the chief of your office told us of a problem which resulted from a deficiency in the law or your regulations under which you cannot pay extra fees to contract doctors to board ships and clear them after regular working hours. Of course, a doctor is not going to get up at 2 in the morning to clear a ship unless he is paid extra and the shipowner is happy to pay because it costs the tankers that are affected somewhere from $100 to $250 per hour while they are tied up awaiting clearance.

We called this problem to the attention of the Washington office 2 years ago but apparently not much has been done because when we were there last, a few months ago, we found that the same conditions existed and we got the identical complaint that we had 2 years ago.

What is the difficulty, and why has not something been done about it?

Dr. Telfer. Mr. Chairman, if there were provisions for this in the law—excuse me.

Dr. Lowry. May I speak to that? I was there not long ago.

Mr. Fogarty. Yes.

Dr. Lowry. The problem is—I think you are probably talking about Ponce.

Mr. Fogarty. Yes, and a nearby port on the south side of the island.

Dr. Lowry. The problem is that the inspections are done by contract physicians. The physicians prefer to do the inspections during the regular inspectional hours.

Mr. Fogarty. Six a.m., to six p.m.

Dr. Lowry. Six a.m., to six p.m. The ships come in there from the oil refineries and half of them come in after 6 p.m.

Then they have to wait around until the next morning, before they get inspected. The company is perfectly willing to pay what would amount to overtime inspectional fees, which would be possible if we had a full-time inspector at the port. He could work overtime. The company would pay it. It would not cost the Government anything, and they are perfectly willing to pay the fees for the physicians to do the inspection at night. As a matter of fact, if they would do that, it would save the Government money because we pay them to do the inspections the next morning. The company would be paying to do them at night.

We have searched the law, and the interpretations, and the way the Overtime Act was written. It appears we can only pay extra compensation to full-time quarantine inspectors.

I discussed this with Mr. Kelly. We explored every way. We are in kind of a quandary now because we are all in agreement that this thing should be done. It is a good thing to do, and yet, it appears the intent was that overtime—what is analogous to it—would only be paid to the full-time PHS personnel. We wondered—we just really don't know if this was the intent or not.

Did that about sum it up?

Mr. Fogarty. Within the last 2 or 3 years, what have you done to recommend the law be changed to allow the contract doctor to be paid overtime?

Dr. Lowry. Frankly, I don't know of anything we have done to change the law. Is that right?

Mr. Kelly. So far as I know.

Mr. Fogarty. Are you sure the law prevents the paying of a contract doctor overtime?

Dr. Lowry. I would have to defer to Mr. Kelly on this.

Mr. Kelly. We actually are making an exploration of it right now, Mr. Chairman. I actually was not aware of this 2 or 3 years ago, that we had this kind of problem, but Dr. Lowry told me about it when he came back.

We are making an exploration to see if there is not a technique whereby we could arrange to pay, or have paid, the contract doctors for their after-hour services, and get reimbursement for them. You recall that this whole provision for the payment of overtime, to quarantine personnel and the reimbursement, was a provision written into an appropriation act a few years ago and it is sort of a long and complicated thing.

Mr. Fogarty. Everybody seems to be in agreement that this should be corrected.

Dr. Lowry. We can get the physicians to do it. The company is willing to pay. It will save the Government money because they will be paying for inspections that we are now paying for, that are done after 6 p.m.

NEW YORK SITUATION

Mr. Fogarty. Before we go on, almost every time I land at the International Airport in New York, I get complaints that they have insufficient personnel there to take care of the job.

Have you had any complaints recently?

Dr. Telfer. No, sir. I am completely surprised to hear this, Mr. Chairman.

Mr. Fogarty. Off the record.

(Discussion was had off the record.)

Dr. Terry. I think Dr. Lowry might describe to you something of the study we have done with regard to the whole New York area.

Mr. Fogarty. Who is in charge now?

Dr. Telfer. Dr. Benjamin Chester.

Mr. Fogarty. The name sounds familiar.

Dr. Terry. He was formerly chief of dermatology in our Staten Island Hospital.

Mr. Fogarty. I remember him.

Dr. Terry. Then he was the Deputy MOC for 2 or 3 years before he was moved into this position last summer. He is a very capable person.

Mr. Fogarty. Go ahead, Doctor.

You were talking about the New York situation.

Dr. Lowry. There were a number of reasons why we felt it would be a good idea to have a pretty thorough study made of the activities there, both the maritime and the airport. Just about a year ago, we sent a group up there and reviewed the whole program; what the objectives were, how they were being accomplished, the personnel they needed and so forth. We made a considerable number of changes, based on these recommendations, after July 1, when Dr. Chester came in. We are making more as the year goes by and we will make more this July. I hope that the result of this will be that the service that you and others get when you arrive will be even better than you got before and it will be without any request for additional personnel.

Mr. Fogarty. Is there anything else you want to say about this situation? Are you short in any other areas? What about Miami?

Dr. Telfer. Sir, we feel that Miami is adequately staffed at the present time.

Mr. Fogarty. Two or three or four years ago, I had some complaints about Miami.

Dr. Telfer. There have been increases.

REDUCTIONS IN ORIGINAL REQUEST

Mr. Fogarty. You were allowed to request $7,116,000 in the budget. What did you ask the Department for?

Mr. Riggs. We asked the Department for 812 positions, the total being $8,397,000.

Mr. Fogarty. Can you give us a breakdown of the difference between what you asked for and what the Bureau of the Budget allowed, the number of positions, and where they were to be located and what you wanted them for?

Mr. Riggs. Yes, sir.

(The information follows:)

Foreign quarantine activities

1963 comparable appropriation	$5,911,000
Operating budget	5,911,000
1964 preliminary estimate to Department	8,397,000
1964 Department request to Bureau of Budget	7,547,000
Congressional estimate	7,116,000
Net reduction by Department from Public Health Service estimate (80 positions)	850,000
Net reduction by Bureau of Budget of Department estimate (38 positions)	431,000
Net total, Department and Bureau of Budget reduction (118 positions)	1,281,000

	Department of Health, Education, and Welfare		Bureau of the Budget	
	Positions	Amount	Positions	Amount
Coverage of Mexican border [1]	38	$259,000	8	$47,000
TB protection	4	171,000		
Yellow fever	6	51,000		
Predeparture disinfection	9	84,000		
Psittacosis control in birds	3	23,000		
Inspector training	1	31,000		
Improvement in operating procedures	1	8,000		
Medical examination of visa applicants	20	154,000		
Rental of space at airports		90,000		
Decentralization of personnel function [1]	+2	+23,000	2	23,000
Minor adjustments and rounding		2,000		12,000
Research and development			4	29,000
Disease intelligence			2	12,000
Public inquiries and information			2	13,000
Minor maintenance [2]				47,000
Reduction in mandatory increases and nonrecurring decreases				40,000
Wage board supplemental				36,000
U.S. program			20	172,000
Total reduction	80	850,000	38	431,000
Net total reduction by Department and Bureau of Budget			118	1,281,000

[1] Revision, 2 positions for personnel.
[2] Presently included in GSA budget.

PROPOSED UTILIZATION OF ADDITIONAL PERSONNEL REDUCTIONS BY DHEW

Coverage of Mexican border (38 positions): These positions would provide 24-hour coverage and depth at the eight major crossing points along the Mexican border. The increased staffing would provide reasonable protection against the introduction into the United States of quarantinable and other communicable diseases.

The additional positions would be assigned to El Paso, Tex., 1; Hidalgo, Tex., 7; Brownsville, Tex., 2; Eagle Pass, Tex., 2; Laredo, Tex., 4; San Ysidro, Calif., 7; Nogales, Ariz., 10; Calexico, Calif., 5.

TB protection program (four positions): A significant number of cases of active tuberculosis uncovered by periodic X-ray of regular border crossers warrants the use of mobile X-ray units on a full-time basis to provide coverage at crossing points not served by permanent X-ray installations. Two mobile X-ray units were proposed with an inspection team for each unit. In addition, two permanent X-ray installations were proposed to cover border crossing points at Cordova Island and Del Rio, Tex.

Yellow fever protection (six positions): Additional personnel were requested to carry on investigations on mosquito taxonomy, biology, behavior, and resistance to insecticides; to improve survey and control methods; and to investigate other problems of prevention of implantation of yellow fever in our country from yellow fever infected areas. These positions would be assigned to San Juan, three; Miami, two; Honolulu, one.

Predeparture disinsection (nine positions): To supervise application of predeparture disinsection measures to be accomplished by airline employees and to inspect aircraft arriving from foreign countries. These positions would be assigned to international airports.

Psittacosis control in birds (three positions): Investigations on groups of imported psittacine birds held in isolation would be made to determine the prevalence of psittacosis infection and certain other diseases of public health importance in such birds, to evaluate methods, and to control these diseases under conditions similar to those existing in commerce.

Inspector training (one position): To provide refresher courses oriented to changing conditions to maintain an acceptable and uniform level of performance in the quarantine inspector group.

Improvement in operating procedures (one position): To improve procedural issuances governing application and standardization of essential health controls. This position would be located at headquarters.

Medical examination of visa applicants (20 positions): To meet the needs of this country in examining its prospective citizens and other aliens planning a prolonged stay in the United States, additional staffing of medical officers and visa aides would be utilized. The additional positions would provide staffing at El Paso, Tex., Montreal, Canada and at visa examining units along the Mexican border.

Reductions by BOB

Coverage at Mexican border (eight positions): These additional positions would be assigned to El Paso, Tex., two; Brownsville, Tex., one; Eagle Pass, Tex., one; San Ysidro, Calif., one; Calexico, Calif., two.

Decentralization of personnel function (two positions): To establish a personnel function in the Division. These positions would be located at headquarters.

Research and development (four positions): To establish a program of comprehensive studies designed to evaluate the effectiveness of present medical examining procedures in fulfilling the responsibilities of the Public Health Service with respect to the Immigration and Naturalization Act.

Disease intelligence (two positions): To cumulate, analyze, and disseminate worldwide epidemiological data to Division of Foreign Quarantine staff and others concerned. These positions would be assigned to headquarters.

Public inquiries and information (two positions): To provide information to travelers on how to protect their health when traveling abroad and how to prevent their becoming carriers of diseases from abroad. These positions would be utilized at headquarters.

U.S. program (20 positions): To reestablish positions extended into 1964 due to employment reduction imposed on Division of Foreign Quarantine in 1963.

Mr. FOGARTY. Are those figures still valid as far as you people are concerned—the original figures?

Dr. TELFER. Not entirely, sir.

Mr. FOGARTY. Should they be revised upward or downward?

Dr. TELFER. Downward, Mr. Chairman.

Mr. FOGARTY. Do you mean the problems are lessening in this field?

MEXICAN BORDER SITUATION

Dr. TELFER. We have a different situation facing us, sir, in respect to the Mexican border. We are in the process of a trial of a multiple screening operation there with the other inspectional agencies, whereby, of the approximately 100 million crossings of the border, there is more complete screening done by representatives of each agency, for all agencies, with backing by the specialists in the particular field.

We do not know whether this will achieve a savings yet or not because we do not know how much support the operation requires and then, too, there is the question of what percentage of all the inspectors should be ours, and what percentage should be from other agencies. This all has to be determined, but it looks like we are going to have a more effective screening operation there, and that we should not ask for certain additional employees that we had asked for originally for this budget.

Mr. Fogarty. When we went out there 3 or 4 years ago, some of your people down in the lower area of California were hoping that you would put more men down there, down near the Mexican border.

They thought they were in kind of bad shape down there. We spent 2 or 3 days in that area and we were convinced that you should be doing a lot more in that particular area.

Mr. Denton. The doctor used to be a doctor in Evansville, the one he is talking about. I knew him many years ago. He was from Texas.

Dr. Telfer. Dr. Vanderhook, our Deputy Chief of the Division?

Dr. Vanderhook. I was one of the people there. There was a group of people there, at the time.

Mr. Fogarty. Has that situation been corrected?

Dr. Vanderhook. I believe so. I believe they are adequately staffed now, considering the present arrangement; the present study.

Mr. Fogarty. I think your predecessor said the same thing you are saying now, but out in the field, they did not agree with your predecessor's statement that you were adequately staffed.

Dr. Telfer. We are not receiving complaints from the field now, sir.

Mr. Fogarty. Sometimes you people don't get the complaints, but we do.

Dr. Lowry. Mr. Chairman, I think we should point out that what the doctor is saying now, is that we should hold in abeyance, until we know the results of the study, any requests for additional increases on the Mexican border.

With regard to what we asked the Department and the Bureau of the Budget for, originally, we included some increased staffing on the Mexican border. However, since that time, we have entered into this experimental phase and we feel it would be prudent to hold things as they are. It depends on the time you are speaking of. If we are going to continue in the present system, we would require more than we presently have.

Mr. Fogarty. I don't think anybody in this country or in Congress wants you to cut down on personnel where they are necessary to keep out disease. I think we are not that concerned about saving money.

VISA MEDICAL EXAMINATIONS

Mr. Denton. I think Mr. Fogarty covered this question but I did not understand it very well.

I understand you have a new program so that anybody who is examined for a visa in a foreign country pays $10.

Dr. Telfer. To the U.S. Government. Yes, sir.

Mr. Denton. Does that money go in the Treasury or to Public Health.

Dr. Telfer. It is collected by the Department of State, Mr. Denton, and then goes into the general funds of the Treasury.

Mr. Denton. Well, how much does it cost you to make those examinations? How much do you pay the contract doctor to make the examinations?

Dr. TELFER. At present, sir, this operation is going on only where we perform the examination, and we are not presently contracting for an outside doctor.

Mr. DENTON. Most of your examinations are made by contract doctors, are they not?

Dr. LOWRY. No, sir. Most of these examinations are made by our own Public Health Service physicians who are stationed abroad. We determined the cost per examination and that is how the $10 fee was established. It is enough to cover the cost of each examination.

Mr. DENTON. Well now, on page 46 of your justifications it shows that you estimate, in 1964, you will make 203,000 examinations. That would mean that you would collect——

Dr. LOWRY. $10.

Mr. DENTON. $10 for each one, or $2,030,000

Dr. LOWRY. There are a few from which we do not get a fee. There are a few who do not pay a fee; there are refugees, escapees, and a few others. The amount would be slightly less than the number of examinations times $10.

Mr. DENTON. So your agency really pays into the Treasury, or causes to be paid in the Treasury, about $2 million?

Dr. LOWRY. That is correct.

Mr. DENTON. What are the medical notifications over here that are listed in the same justification, which show $60,900 for 1964? What are they?

Dr. TELFER. This represents the cases that were examined and then there was a finding, a diagnosis made, of some disability in the case of the applicants, which was notified to the consular officer and this item of $60,900 is an approximation, based on past experience.

Mr. DENTON. Does that mean those will be turned down?

Dr. TELFER. They won't necessarily be turned down, sir. The notification goes to the consular officer who issues the visa, and he determines whether or not it is an excludable condition or whether there are circumstances which will cover the need and the visa may be granted.

Mr. DENTON. I see.

VENEREAL DISEASE TREATMENT FOR MEXICAN LABORERS

Another question: We were down at El Centro, and they were examining the Mexicans that came in. A number of them had syphilis. I noticed they only gave them just a preliminary treatment. That seems rather dangerous to me, to turn them loose with just a preliminary treatment.

Dr. TELFER. Mr. Denton, the treatment that has been given has been determined in trials to be adequate to render the person noninfectious so that they cannot pass the disease on, from that particular infection. So we believe it is providing the necessary safeguard.

Dr. LOWRY. I don't think that the word "preliminary" really describes it adequately. It is a rather significant dosage that is given to them and it was based—that dosage that is given is a one-shot dose—it is one injection, that will render them noninfectious and for the time that they are in the United States, you don't have to have any concern, unless they get reinfected from some source in the United States.

Mr. DENTON. I thought you sent them back to Mexico.

Dr. LOWRY. No sir. This is not true. We have developed a rapid diagnostic technique, and a rapid treatment, so that these people can be treated and admitted as laborers.

Mr. DENTON. Would it make any difference how far advanced the syphilis was?

Dr. LOWRY. They would not be permitted to come in the United States if they have complications that would render them unsuitable for full time, active labor. They just would not be acceptable. These are the people that had syphilis in a latent stage. They are not disabled by the disease but if they had not come in and been treated, they might get disabled in later years, with central nervous system syphilis or some other complication.

Mr. DENTON. Their blood test would not show that, would it?

Dr. LOWRY. Yes.

Mr. DENTON. It would?

Dr. LOWRY. Yes.

Mr. DENTON. In the third stage?

Dr. LOWRY. Oh, no. The blood test would show the presence of syphilis. If you would want to know whether it was in the central nervous system, that would require additional tests of the central spinal system.

MEDICAL INSPECTIONS

Mr. DENTON. I was at one of your stations where there was just one doctor. I gathered he had about three ports and two large ports, to examine. You have noncommissioned officers doing most of that work, don't you?

Dr. LOWRY. Well, the noncommissioned officers do what we call medical inspections of the people who are coming in—travelers and so forth. The medical examinations of the visa applicants are all done by physicians.

Mr. DENTON. This one physician had to examine all the people that came in three ports, and two were pretty good size ports, too.

Dr. LOWRY. He must work part time at each place. That is the only way we can do that.

Mr. DENTON. I gathered that these noncommissioned officers made the examinations because the doctor could not possibly do it all.

Dr. LOWRY. No, sir. They do the medical inspections.

Mr. DENTON. What do you mean by "medical inspection"?

Dr. LOWRY. We will let Dr. Telfer tell us.

Dr. TELFER. Mr. Denton, the medical inspections are performed by a specially trained medical technician whom we call a quarantine inspector. He is a person who has an educational background parallel to medicine. Most of these men have served for many years in the Armed Forces as hospital corpsmen. When they take their 20-year retirement from the Armed Forces they are eligible to take the civil service examination for our positions. They come to us. They are given a year of training within the Division of Foreign Quarantine and then, in action, these men, we feel, are capable of detecting outward signs of illness. When they find a sign of illness in the person or in the papers that he carries, or in the X-ray film, that he may carry, they call the physician who then comes and gives the medical examination and consultation.

Mr. DENTON. Yes, sir. But unless the physician is called, he doesn't make the examination?

Dr. LOWRY. That is right, sir, in regard to these particular things.

Mr. DENTON. This one doctor did not have a great many examinations to make, if that is the case, did he?

Dr. LOWRY. Mr. Denton, I know we are trying to clear up this point. The travelers who come to the United States, or the border crossers, are the ones who get the inspection, to see if they have any signs of communicable diseases. The immigrant who comes to the United States get a thorough medical examination by a physician. Either he gets it done by our own Public Health Service physician, or it is done by a foreign physician abroad. These examinations are reviewed at the time of entry into the United States.

Mr. DENTON. I think that is all.

Mr. FOGARTY. Is there anything else you would like to say?

Dr. TELFER. Mr. Chairman, my qualifying remark regarding our submission of items to the Department applied only to the one item of additional inspectors for the border, and there were several other items.

Mr. FOGARTY. They will all show in the record.

Dr. TELFER. Yes, sir.

Mr. Chairman, we appreciate this opportunity.

Mr. FOGARTY. Thank you, very much.

THURSDAY, MARCH 14, 1963.

SCIENTIFIC ACTIVITIES OVERSEAS (SPECIAL FOREIGN CURRENCY PROGRAM)

WITNESSES

DR. MARTIN M. CUMMINGS, CHIEF, OFFICE OF INTERNATIONAL RESEARCH, NATIONAL INSTITUTES OF HEALTH, ACCOMPANIED BY

DR. JAMES A. SHANNON, DIRECTOR, NATIONAL INSTITUTES OF HEALTH

ROBERT H. GRANT, ASSISTANT CHIEF, OFFICE OF INTERNATIONAL RESEARCH, NATIONAL INSTITUTES OF HEALTH

SCOTT ADAMS, DEPUTY DIRECTOR, NATIONAL LIBRARY OF MEDICINE

LAWRENCE C. GRAY, OFFICE OF BUREAU CHIEF FOR ENVIRONMENTAL HEALTH

DR. FORREST E. LINDER, DIRECTOR, NATIONAL CENTER FOR HEALTH STATISTICS

DR. DAVID J. SENCER, ASSISTANT CHIEF, COMMUNICABLE DISEASE CENTER

DR. DAVID E. PRICE, DEPUTY SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
PUBLIC HEALTH SERVICE			
21 Travel and transportation of persons	74		
25 Other services	3,108	8,189	9,323
Total, Public Health Service	3,182	8,189	9,323
ALLOCATION TO NATIONAL SCIENCE FOUNDATION			
25 Other services	733	350	350
Total obligations	3,915	8,539	9,673

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
Foreign health research (program costs, funded)	1,145	8,539	9,673
Change in selected resources [1]	2,770		
Total obligations	3,915	8,539	9,673
Financing:			
Unobligated balance brought forward (−)	−3,679	−8,765	−3,026
Unobligated balance carried forward	8,765	3,026	
New obligational authority (appropriation)	9,000	2,800	6,647

[1] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $0; 1962, $2,770,000; 1963, $2,770,000; 1964 $2,770,000.

Prepared Statement

Mr. Fogarty. Doctor Cummings, we will put your statement in the record.

(The statement follows:)

Mr. Chairman and members of the committee, I appreciate this opportunity to report to you on the plans and progress made by the Public Health Service in the research and other scientific activities supported by excess U.S.-owned foreign currencies. These activities are being carried out by the National Institutes of Health, the Bureau of State Services, and the National Library of Medicine, under authorization contained in section 104(k) of Public Law 480.

The 1964 appropriation estimate of $6,647,000 together with the estimated unobligated balance of $3,025,600, from 1963 will provide funds for obligation as follows: National Institutes of Health, $4,291,000; Bureau of State Services, Community Health Activities, $2,898,000, and Environmental Health Activities, $1,837,000; the Office of the Surgeon General, National Center for Health Statistics, $250,000; and the National Library of Medicine $396,600.

The Special Foreign Currency program of the Public Health Service has six major objectives designed to further progress in meeting the health problems in this country:

1. To conduct research in other areas of the world to complement investigations currently being conducted in this country and to promote the health of the people of the United States.
2. To develop epidemiological and ecological information and diagnostic methodology to prevent the introduction of certain diseases into this country and to contain these diseases should they be introduced.
3. To evaluate and test control measures under conditions of higher prevalence than is present in the United States.
4. To provide more rapid evaluation of therapy under high prevalence conditions.
5. To expand and improve means of solving environmental health problems.
6. To conduct a program of translation and dissemination of foreign medical research literature to strengthen international communication in the medical sciences.

NATIONAL INSTITUTES OF HEALTH

Research financed by the National Institutes of Health is conducted as a direct extension of its intramural research programs through the development of collaborative research agreements between the NIH and foreign investigators. This enables the NIH to take advantage of unusual research opportunities and affords the advantage of utilization of unusual talents or skills of qualified scientists abroad.

I would like to report to you some of the interesting scientific results thus far achieved through the expenditure of Public Law 480 funds during the past year.

Israel.—The National Institutes of Health, in collaboration with the Weizmann Institute (which produces 98 percent of the world supply of oxygen 18) is studying the development of sensitive methods of measurement of that oxygen isotope. Preliminary work indicates that it is entirely practical to make precise measurement of isotope abundance in chemical compounds through infrared spectroscopy. The spectroscopic method for measurement of oxygen 18 may provide the sensitivity and simplicity which are normally obtained only with radioisotopes. Thus we shall have a renewal of interest in mechanisms of biological oxidation and human metabolism. It is entirely possible that this research may revolutionize procedures available for these basic biochemical studies with isotopic oxygen.

Egypt.—Collaborative projects in Egypt have led to the discovery of:

1. The human requirement for vitamin E in the treatment of a macrocytic megaloblastic anemia in infants, and
2. The human requirement for zinc; and has demonstrated a clinical syndrome of dwarfism, infantilism and anemia found to be widespread in the Near East which is believed to be associated with deficiencies of zinc and iron. It appears that zinc deficiency, heretofore unsuspected in human beings, is one of the causes of dwarfism and infantilism.

In addiiton, detailed studies have been conducted on the problem of iron deficiency anemia, complicated by parasitic infestation, employing radioisotope techniques. Data derived from these studies may contribute to the development of practical procedures for the treatment and prevention of this type of anemia which occurs in the United States.

Pakistan.—1. Preliminary evidence, arising from our collaborative research, suggests that thiamine-deficient individuals are very susceptible to cholera. Furthermore the treatment of acute cases seems to require, in addition to the usual fluid replacement, the administration of thiamine (vitamin B_1).

2. Identification and study of blindness in infants (xerophthalmia) which results from vitamin A deficiency is being investigated in a population of infants in east Pakistan. This study will elucidate the possible relationship of the high consumption of mustard oil (an unusual unsaturated fatty acid) and other local dietary factors in the utilization of vitamin A.

India.—The Central Food Technological Research Institute, in Mysore, in collaboration with NIH scientists, has developed a plant protein supplement from peanut meal which is effective in the treatment and prevention of kwashiorkor (severe protein malnutrition in infants). Preliminary observations indicate that an extract of coconut meal greatly enhances the biological value of these plant protein isolates. Interestingly enough, this enhancement cannot be accounted for on the basis of the amino acid or protein content.

Brazil.—A collaborative investigation now underway in Brazil has recently yielded two rare plant extracts which have demonstrated reproducible antitumor activity when injected into mice-bearing tumors such as carcinoma, sarcoma and leukemia. These extracts have also been effective in destroying cancer cells derived from human malignant tumors. Chemical fractionation is now being performed to identify the active ingredients in these extracts.

A total of 29 collaborative medical research projects have been negotiated by the National Institutes of Health, in Brazil, Egypt, India, Israel, Pakistan, Poland and Yugoslavia. Preliminary negotiations are underway for studies in Burma and Indonesia.

Within the past year several U.S. universities having research interests abroad have expressed the desire to collaborate with the NIH in the conduct of research through the utilization of Public Law 480 funds. We intend to make Public Law 480 funds available to selected universities for their use in these countries. However, the NIH will retain the responsibility for scientific review and official negotiations, thus preserving the collaborative concept.

Despite the limited number of countries in which Public Law 480 currencies are available to the National Institutes of Health, collaborative research interests on the part of NIH scientists and foreign investigators remains high. This is reflected in the record of expenditures. By December 31, 1961, $1.6 million had been obligated whereas through December 31, 1962, an additional $2.6 million had been obligated. The estimated obligations for the National Institutes of Health during 1964 in the amount of $4,291,000 will enable it to proceed with new projects proposed for negotiation.

The special foreign currency program of the Bureau of State Services, for which funds were first made available in 1962, is aimed at extending and improving practical means of solving health problems, utilizing the efforts of well-qualified scientists of other nations as well as our own.

BUREAU OF STATE SERVICES—COMMUNITY HEALTH ACTIVITIES

This program proposes to develop a variety of collaborative agreements designed to parallel and complement domestic studies. These projects will facilitate comparative studies of disease states having a wide geographic distribution. A program devoted to the study of arbor virus infection has been established. This includes a project in Poland investigating the ecology of these infections. Agreements with Israeli scientists are now being processed to support similar studies of the arbor viruses in that country. This type of worldwide network of research endeavor, conducted by reputable scientists in foreign countries, and coordinated by the staff of the Communicable Disease Center will greatly enhance the effectiveness of the World Health Organization Regional Reference Laboratory for Arthropod-borne Virus Diseases recently established at the Center.

Agreements are being negotiated with India and Yugoslavia to establish research projects concerned with enteric virus infections of the central nervous system. These infections which often mimic polio are of great importance currently. As the decline in poliomyelitis in this country is accelerated by the use of oral polio vaccine, it becomes of great importance to understand the effects of other virus infections which can be confused with polio. Yugoslavia and India offer two different backgrounds to study these diseases and more rapidly add to our understanding of them.

The estimated obligations for community health activities for 1964 in the amount of $2,898,000 will provide for studies of arbor viruses, plague, and diarrheal disease in India, epidemiological investigations of osteoporosis in Israel, lipid absorption and heart disease in Pakistan, arbor virus and trichinosis in Poland, atypical mycobacterial disease in Egypt and similar studies in Yugoslavia, Burma, and Indonesia.

BUREAU OF STATE SERVICES—ENVIRONMENTAL HEALTH ACTIVITIES

This program proposes to utilize skills and talents as well as unusual resources which exist in other countries to expand and improve methods of solving environmental health problems. Thus, studies in the field of sanitary engineering, air pollution and food sanitation are projected. Continued economic growth in many of these countries during recent years has been accompanied by serious environmental health problems. These have at the same time created research opportunities for studies of value to the country in which they will be performed and to the United States. As in the case of water supply and pollution control, projects are now being proposed to develop and evaluate new techniques for the detection and measurement of viruses in polluted water, to identify trace organic contaminants in water supplies and to evaluate techniques for the disposal of wastes.

The estimated obligations for 1964 for environmental health activities in the amount of $1,837,000 will provide for these studies in India, Israel, Poland and Egypt.

NATIONAL CENTER FOR HEALTH STATISTICS

The National Center for Health Statistics of the Office of the Surgeon General is for the first time planning for active participation in the Public Law 480 program.

As the low death rate becomes a decreasingly sensitive index for evaluating the health of the population, the United States has, in common with other countries throughout the world, a need to develop and improve knowledge of morbidity, including acute and chronic diseases and disability. The National Health Survey Division is currently engaged in a health records survey program to collect data from hospitals and other institutions in the United States and pilot experience in other countries can contribute to our own work. In other situations the development of basic methods of measuring the crude birth and death rates of an area are sorely needed.

Methodological work is needed for the study of the relationship between health and socioeconomic variables, and herein particular, foreign experience can produce data for comparison with U.S. findings.

The projects proposed would provide an opportunity to study and evaluate methodology and findings as they may relate to analysis of U.S. data and to contribute to the factual base related to other U.S. developmental programs.

The estimated obligations for 1964 in an amount of $250,000 will provide for research projects in Egypt in methods of collecting and analyzing data on levels of morbidity, mortality and natality, and research on methods of measuring death and birth rates by survey methods in India.

NATIONAL LIBRARY OF MEDICINE

Finally, I should like to discuss the program developed by the National Library of Medicine.

The National Library of Medicine on behalf of the Public Health Service and in coordination with the National Science Foundation, operates a program for the translation and dissemination of foreign medical research literature under section 104(k) of Public Law 480. These funds are being used through contracts established in Israel, Poland, Yugoslavia, and India, for purposes relating to strengthening international communication in the medical sciences.

A special feature of this program has been the use of foreign currencies to effect the initial publication within the country of origin of research journals in the English language. These projects reduce costly individual translations by multiple agencies within the United States. For example, 10 Polish research journals are now being published in English rather than Polish under this program, a development which is both scientifically and culturally beneficial.

To date, 9,245 pages of Russian, Polish, and Serbo-Croatian scientific literature have been translated, published, and distributed to 500 American medical libraries. This total includes 4,275 pages of Russian translations in Israel, 3,470 pages of Polish, and 1,500 pages of Yugoslav translated literature. In addition, 7,000 abstracts of Soviet biomedical science publications have been prepared for publication in the United States. Additional materials will be received from these countries under contracts negotiated in 1962 for periods of more than 1 year.

The estimated 1964 obligations in the amount of $396,600 will provide in India and Israel for the translation and publication of additional pages of biomedical literature, preparation of critical review papers, and continuation of the dental index project; in Poland for the continuance on a yearly basis of the translation and simultaneous publication in English of 10 selected scientific medical journals totaling an estimated 5,000 pages; and in Yugoslavia for the continuation of the translation and simultaneous publication in English of 4 scientific medical journals.

In summary, the Public Health Service is continuing its plan for collaborative research in foreign countries utilizing skills, talents, and resources which are available. The expenditure of U.S.-owned local currencies makes it possible to pursue these studies without imposing a drain on U.S. dollars.

Although it is still too early to evaluate the scientific results of this program early significant accomplishments have emerged suggesting that this investment will be a justifiable one.

INCREASE REQUESTED FOR 1964

Mr. Fogarty. The appropriation for 1963 is $2,800,000 and the request for 1964 is $6,647,000, an increase of $3,847,000. However, due to the differences in unobligated balances carried forward, there is $8,539,000 available for 1963 and there is estimated to be $9,672,600 available for 1964, an increase of $1,133,600.

PROGRAM DELAYS

The total of the 1961 and 1962 appropriations was $12,707,000 and you only obligated about $4 million by the end of 1962; is that right?

Dr. Cummings. That's right.

Mr. Fogarty. Why has this program been so slow?

Dr. Cummings. Mr. Chairman, the Public Health Service Public Law 480 program is comprised of three major parts. The NIH segment in my judgment has not moved slowly. On the contrary, in the past year it has moved quite briskly. The Bureau of State Services started their Public Law 480 research program about a year later and have not had the time to obligate the funds available to them. I believe the National Library of Medicine has fulfilled its obligation with the small amounts of money available to them.

I would be very pleased to report to you and the committee on the progress and plans which have been made by the Public Health Service and I am prepared to discuss with you the scientific content of our prgoram in individual countries. Also we have with us representatives from the other bureaus who are prepared to do the same.

Mr. Fogarty. We will get to that pretty soon.

Dr. Cummings. All right, sir.

Mr. Fogarty. When you only obligate $4 million out of $12 million it does not look very good. A year ago you told us that you would obligate all the funds you had available in 1962. Now you tell us that $8,764,000 was unobligated at the end of the year.

Dr. CUMMINGS. May I address myself to that question as it relates to NIH first?

NIH obligated more than $3 million during the last fiscal year and estimates an obligation of somewhat more than $4 million during the present fiscal year. Thus, NIH cumulative obligations would be about $7,200,000. I think this is a reasonably good record, Mr. Chairman.

There have been delays in the negotiations in several countries. There are no formal agreements yet in Indonesia and only recently have we been able to successfully negotiate a country-to-country agreement in Burma. We were delayed in India by certain administrative changes as well as political changes in the Ministry of Health within that country. However, I can report to you that recent negotiations in India are proceeding quite successfully.

CARRYOVER BALANCES SUFFICIENT FOR 1963 PROGRAM

Mr. FOGARTY. According to the figures you give us now, if we had turned down the 1963 request completely, you would have more money than you could use in 1963 from carryovers. Is that right?

Dr. CUMMINGS. The NIH did not request Public Law 480 funds during the past fiscal year. We were aware of the fact that there was a large unobligated balance from the previous year. As a result we have been able to come through with a stable and firm position at NIH.

Mr. FOGARTY. Well, Doctor, I do not know whether you are avoiding these questions or not.

Dr. CUMMINGS. I am not trying to avoid any questions.

Mr. FOGARTY. A year ago you told us that you would obligate all funds available in 1962. Now you tell us that $8,764,000 was unobligated at the end of the year.

Dr. CUMMINGS. Mr. Chairman, I think we may be talking about two different issues. The Public Health Service has changed the basic budget procedure for Public Law 480 programs. All unobligated balances have been lumped together. During the past year, when I reported to this committee, we identified the various PHS segments and I pointed out what I thought would be the development for these various programs. My hope this year is that NIH specifically will have obligated more than $7 million of the available funds. The other bureaus, I think, have had a later start and have not had the same opportunity.

Mr. FOGARTY. The justifications of last year still show you had nothing to be carried over to 1963 and now you show you had $8.7 million.

Dr. SHANNON. Can we submit an analysis by organization within the Public Health Service, showing when the funds became available, and how they were spent?

Mr. FOGARTY. Are you blaming everybody else but NIH for the delays?

Dr. SHANNON. I think the Bureau of State Services has the same difficulties we had during the initial year. We were able to make very little in the way of commitments during this initial year. I think this is quite a normal expectation.

This is a very complicated program. This takes an inordinate amount of time for a good quality program and takes an inordinate amount of negotiations—time for negotiations—in order to achieve it.

Mr. KELLY. I think that Dr. Cummings is really saying that the statement you make is accurate; that we predicted we were going to move forward more rapidly than we did—more rapidly than we did in 1962—but in the total Public Health Service we have gained substantial momentum and he now feels that this program is rolling and is entitled to additional funds in 1964 to carry out its purposes.

Mr. FOGARTY. Well, that should bring the answer to the other question I asked. According to the figures you give us now, if we had turned down the 1963 request completely, you would have more money that you could use in 1963 from carryovers.

Mr. KELLY. In terms of net figures, that is correct.

REASONS FOR DELAYS

Mr. FOGARTY. We have had this same difficulty in connection with other foreign currency programs. Either you fail to make a very careful analysis when you give us these estimates or there are some serious roadblocks that ought to be removed.

Dr. SHANNON. Probably there are serious roadblocks and I would like to say something about the estimates.

These negotiations are so complex and so complicated that what one has to do in the mechanics of carrying out this program is to set forth a program for an area at least a year ahead. One has to allocate and hold under that allocation for purposes of negotiations certain funds.

Now, if those allocations are made, then they are not available for negotiations elsewhere and one can negotiate as has happened in India throughout the entire year with funds located in the reserve until these negotiations were completed. As it turned out, during the initial 2 years there was no successful negotiation and the result is that the funds are returned in the allocation and are unused for the full 2-year period. There is no bottleneck, I would say, within this country. The bottleneck relates to the complexity of the problem and the fact that we as professional organizations must deal with political units in other countries that are much more complex than ours.

Mr. FOGARTY. Maybe you ought to hire a nonprofessional to do the job.

Dr. SHANNON. The only reason the program has moved as well as it has is that we do have a nonprofessional who rides herd on his assistants. We have Mr. Robert Grant, and were it not for Mr. Grant this program would not move at all.

Mr. FOGARTY. I think Mr. Grant is a good man for the job.

About a year ago the estimate was that the National Institutes of Health would not need any funds from the appropriation for 1963.

Dr. CUMMINGS. That's correct.

Mr. FOGARTY. Now you have done a complete turnaround. You are going to be the largest users in 1964.

Dr. SHANNON. This is not a complete turnaround. We said that the delay in negotiations was such that the funds that were available for the balances coming from 1962 to 1963 would cover our activity during 1963 and in fact they have covered the activities, but we feel now, with those programs well underway we are ready to take an additional step. So I think this is a very logical development and in line in here with the practical problems of the situation.

Mr. Fogarty. You talk a lot about how complex the problem is.

Dr. Cummings. Mr. Fogarty, it truly is complex. For example—in Indonesia, $88,000 appropriated by this committee now has a buying power of less than $5,000, which forces you to completely withdraw from the scientific plan that was put forward. In addition, I think I should point out that the lack of available hard dollars to go with the foreign currencies makes it extraordinarily difficult to mount such programs. Supplies and equipment that are needed, for example, for many of the proposals, cannot be purchased with the foreign currency. I would not for a moment deny that there have been complexities.

PROGRESS TO DATE

On the other hand, my view is that we now have firm relationships established in 8 countries and we have 29 active ongoing studies which have American collaboration. The fact that the other bureaus appear to be moving in the same direction would not cause me to feel discouraged.

The Library of Medicine will be able to demonstrate some very fine end products from this small investment. I have had the pleasure of looking at some of the translations that have come from their use of the funds abroad. I think this is a magnificent way to spend this type of currency—to have translations done by a second party at a cost that is perhaps less than we could provide the same service in this country.

PROGRAM IN YUGOSLAVIA

Mr. Fogarty. On page 8 you say:

> The Yugoslavian Government has requested that a negotiating team be sent to explore collaborative research projects of mutual interest to United States and Yugoslavian scientists.

Do you have any more detail about what will be involved in this? On page 10 you indicate that you plan no new program at all in Yugoslavia in 1964. These do not seem to tie together.

Dr. Cummings. The paradox results from the following historical events. For 2 years we were advised not to come to Yugoslavia—that the Government of Yugoslavia would not welcome scientific teams from this country. A change took place. I assume a political change. This caused an entirely different environment to develop. We were invited to send a team. We did so within a period of some 45 days, and I can report to the committee that as a result of this visit we now have a large-scale collaborative effort in the field of cardiovascular disease which has been successfully negotiated. We could have negotiated additional agreements, Mr. Fogarty, but the Government of Yugoslavia did not wish us to spend more than $266,000 in the first year of this effort. The Communicable Disease Center, Bureau of State Services—broadly all of the BSS programs are ready to move there when the Government of Yugoslavia agrees to the further use of Public Law 480 funds in that country.

EXAMPLES OF PROJECTS CURRENTLY BEING SUPPORTED

Mr. FOGARTY. Would you pick out one project, now being supported from each country, describe it, and tell us what results of value to the United States may logically be expected from it? You may do that for the record.

Dr. CUMMINGS. All right.

(The information follows:)

SUMMARY STATEMENTS, PUBLIC LAW 480 COLLABORATIVE RESEARCH ACCOMPLISHMENTS

Brazil, agreement No. 170603 (antitumor activity of botanical materials)

In Brazil a collaborative research program is devoted to an analysis of plant extracts for their antitumor activity. These alkaloids, derived from plants and flora indigenous to Brazil, are of considerable interest in the field of cancer chemotherapy where they may prove to be more effective than the host of synthetics and antibiotic filtrates currently available for pharmacologic and clinical study. Two such plant extracts have recently demonstrated reproducible antitumor activity when injected into mice bearing tumors such as carcinoma and leukemia and have been effective in destroying cancer cells derived from malignant tumors of human beings. Chemical fractionation of these crude extracts is now underway to identify and refine the specific compounds responsible for the observed antitumor activity.

The Brazilian project provides a potential source of new and unusual chemical compounds to be investigated in our never-ending quest for drugs which are effective in the suppression or cure of all forms of human cancer, the second leading cause of death in the United States.

Poland, agreement No. 127701 (preconceptual causes of defects in children)

This research project is endeavoring to discover the effect of toxins, drugs and other factors which may influence the outcome of pregnancy in the human female. Animal studies already performed by these investigators have demonstrated that antibiotic agents, e.g., penicillin, reduces fertility. This work is being expanded to include a wider variety of drugs, utilizing more refined techniques developed in the United States. For this reason, two Polish investigators are to be exchange visitors at the National Institute of Neurological Diseases and Blindness this spring to learn newer histochemical and biochemical techniques. Human clinical research will be initiated upon the completion of on-going animal studies.

This study complements the expansion of research effort to determine the etiology of central nervous system disorders among the American population, a major national health and economic problem to the United States.

Israel, agreement No. 375106 (study of hypertension and ischemic heart disease)

In Israel a long-term epidemiologic study of high blood pressure and coronary heart disease is being conducted among 10,000 male Government employees over the age of 40. Utilizing standardized examinations and laboratory procedures that will facilitate comparison with the results of similar investigations in the United States and elsewhere, the study is designed to determine those physical, biochemical, nutritional, and psychosocial factors which may influence the development of hypertension and coronary disease in a well-defined population.

To date 1,200 employees have been interviewed and examined according to a well-defined protocol. Currently 300 patients are so processed per week. Preliminary historical data indicate that approximately 4 percent of these subjects have suffered a heart attack; 8.5 percent of the subjects report the existence of high blood pressure.

In view of the fact that coronary heart disease is a leading cause of death and morbidity among middle-aged American males, research concerning those factors which contribute to this toll is highly advantageous to the United States.

Pakistan, agreement No. 116801 (thiamine deficiency in cholera)

In collaboration with the NIH-SEATO Cholera Research Laboratory an investigation concerning the relationship of nutritional states to diabetes mellitus, anemia and infectious diseases has been undertaken.

Preliminary findings of this study suggest that thiamine-deficient individuals are prone to cholera infection. Of considerable importance in the treatment of severe cholera infection is the observation that these patients require replacement of thiamine in addition to the usual fluids for restoration of normal fluid and mineral balance within the body. If substantiated, this would be a major contribution to our understanding of the etiology, treatment, and prevention of cholera.

A nutrition survey has been completed on over 6,500 people in six different rural areas. It was in one of these areas that a recent cholera epidemic occurred and in this group that a nutrition appraisal suggested that thiamine deficiency is a factor in susceptibility to cholera infection.

These studies are contributing to our fund of basic knowledge in the field of nutrition which is of vital concern to the future of America despite economic prosperity. The study of acute cholera infection likewise provides an unusual opportunity to investigate normal and abnormal kidney function and its relationship to heart and blood vessel disease in general.

Egypt, agreement No. 112502 (anemias associated with malnutrition)

Anemias associated with malnutrition in adults are being subjected to intensive study in Egypt. Among these is severe microcytic hypochromic anemia due to iron deficiency which is the most predominant type of anemia found in the United States. Little is known regarding the actual absorption and assimilation of iron, especially from various natural sources. Preliminary results of studies conducted in Cairo, utilizing radioisotope techniques, indicate considerably greater than expected absorption of iron from such foodstuffs as wheat, corn, beans, eggs, and poultry. Evidence has also been obtained which indicates that an appreciable loss of iron occurs in human perspiration. Additional research in Egypt supported by Public Law 480 funds has established the first clear-cut evidence of the human requirement for zinc.

These studies are directly relevant to the prevention and cure of anemias which commonly occur in the United States, especially among pregnant women and malnourished individuals.

India, agreement No. 114301 (vegetable protein supplements and protein malnutrition)

NIH scientists collaborating with their counterparts at the Central Food Technological Research Institute in Mysore, India, have developed a palatable plant protein supplement derived from peanut meal which is effective in the prevention and treatment of severe protein malnutrition in infants. Preliminary observations made in the course of this study indicate that the addition of an extract of coconut meal greatly increases the biological value of these plant protein isolates. Because this enhancement does not appear to be the result of additional amino acids or proteins contained in coconut meal, further investigations are now underway to explain this interesting phenomenon.

This type of research is yielding an abundance of information basic to our understanding of protein malnutrition and associated metabolic changes in infants, children, and nutritionally vulnerable adult groups in the United States.

Yugoslavia, agreement 179801 (hypertension and coronary heart disease in newly industrialized populations)

NIH scientists and Yugoslavian investigators at the Federal Institute of Public Health in Belgrade are collaborating in a recently established long-term prospective study of the incidence of hypertension and coronary heart disease in rural, industrial, and industrializing populations. This research project will investigate the relationship between incidence rates of these important cardiovascular diseases in three distinct populations and ethnic origin, diet, occupation, physical and emotional stress, body habitus and the use of tobacco and alcohol. More than 25,000 workers over age 25 will be studied for at least 5 years or longer, employing a detailed protocol which embodies a complete medical history, physical examination, standardized laboratory examinations and specific diagnostic criteria for hypertensive and coronary disease. The study has been designed to facilitate comparison of data from similar studies in progress in the United States, Israel, and other countries.

From available evidence on the widespread prevalence of hypertensive and coronary heart disease as a cause of disability and death in the United States, it becomes readily apparent that we must seek a more precise understanding of the multiple factors which contribute to the development of these conditions in the high risk, middle-aged segment of our population. Epidemiologic studies of this type may provide important clues for the prevention or early detection of these formidable deases.

CURRENT RESEARCH PROGRAM

Mr. **Fogarty.** Tell us now about the five bureaus and what type of projects each is financing.

Dr. **Cummings.** For the National Institutes of Health, first. In Burma, we now have three research proposals all related to the general field of nutrition. One, a study of beri-beri; second, a study of goiter, and third, a study of anemia, which occurs in pregnant women in that country. These will be undertaken during the next fiscal year.

Egypt—we have proposals for the study of therapeutic and prophylastic agents in bilharziasis and a study of pellagra and nutrition among the population groups available; a study of trachoma and hopefully a study of the pathogenesis of bladder cancer and its possible relations to sckistosomiasis.

In India we have proposals to study the distribution of cancer within India, the study of amebiasis, toxoplasmosis and smallpox, all of which are highly prevalent in this area.

We hope to develop agreements to study periodontal disease and nutrition and studies of diseases of the central nervous system.

In Indionesia, after 2 years of negotiations, we still hope, with the funds available, to implement studies of unusual fungus diseases, which occur in this part of the world.

In Israel, we have had, I would judge, our most unusual success in negotiations. In addition to our ongoing programs, there are proposals for broadened studies of cardiovascular diseases in the unusual population groups there; studies of neurological diseases and blindness and studies of behavioral development in infants from different cultural backgrounds.

In Pakistan last year we were most pleased with how our funds were being used for nutritional studies. We now hope to build into this nutritional research program studies of cardiovascular and cerebral disease; studies of acute diarrheal disease in addition to our current studies of cholera.

In Poland, Dr. Masland's Neurology Institute has had the most aggressive, and I think most promising, program development in this country. It is anticipated that in addition to our ongoing projects in the field of neurology next year, we will undertake studies of cerebrovascular and cardiovascular diseases.

In Yugoslavia, in addition to the newly started study of hypertension and coronary heart disease—in their newly industrialized populations, we would like to begin some neuropharmocologic studies. These scientific areas of interest relate to NIH intramural programs.

Mr. **Fogarty.** I agree with you and Dr. Shannon that this is a real good program—when it gets into operation, that is. The thing that I am critical of is the inordinate delay in getting into operation after the funds are appropriated.

I have, perhaps, seemed to be critical of you. I did not mean it that way—my criticism is of the procedures for this whole foreign currency program. The same delays are encountered in education, social security, and vocational rehabilitation. All of you talk about the complexities of the program. Well, I am for removing the complexities.

When we have a little more time we are going to get into the details of the procedural part of this program in more detail. This is too good a program to be bogged down in all these "complexities."

Thank you very much, Dr. Cummings. You have a tough job, but a good program.

Dr. Cummings. Thank you, Mr. Chairman.

Thursday, March 14, 1963.

NATIONAL LIBRARY OF MEDICINE

WITNESSES

DR. FRANK B. ROGERS, DIRECTOR, NATIONAL LIBRARY OF MEDICINE
SCOTT ADAMS, DEPUTY DIRECTOR
RAY W. GRIM, EXECUTIVE OFFICER
DR. DAVID E. PRICE, DEPUTY SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
	PUBLIC HEALTH SERVICE			
11	Personnel compensation:			
	Permanent positions	1,248	1,402	1,620
	Positions other than permanent	6	6	6
	Other personnel compensation	11	14	28
	Total personnel compensation	1,265	1,422	1,654
12	Personnel benefits	98	110	126
21	Travel and transportation of persons	24	22	25
22	Transportation of things	4	3	3
23	Rent, communications, and utilities	52	43	46
24	Printing and reproduction	87	122	156
25	Other services	1,320	1,116	597
	Reimbursement to National Institutes of Health management fund	143	327	330
26	Supplies and materials	43	78	82
31	Equipment	111	92	1,055
41	Grants, subsidies, and contributions	129		
	Total, Public Health Service	3,276	3,335	4,074
	ALLOCATION TO LIBRARY OF CONGRESS			
11	Personnel compensation: Other personnel compensation	4		
24	Printing and reproduction	4		
	Total, Library of Congress	8		
	Total obligations	3,284	3,335	4,074

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	234	243	268
Full-time equivalent of other positions	1	1	1
Average number of all employees	216	230	252
Number of employees at end of year	216	237	262
Average GS grade	6.4	6.5	6.9
Average GS salary	$5,729	$6,116	$6,283

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
Library services and resources (program costs funded) [1]	2,098	4,172	4,374
Change in selected resources [2]	1,186	−837	−300
Total obligations	3,284	3,335	4,074
Financing:			
Comparative transfers from other accounts (−)	−1,429		
Unobligated balance lapsing	211		
New obligational authority (appropriation)	2,066	3,335	4,074

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[1] Includes capital outlay as follows: 1962, $76,000; 1963, $115,000; 1964, $1,091,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $67,000 (1962 adjustments, −$26,000); 1962, $1,227,000; 1963, $390,000; 1964, $90,000.

General Statement

Mr. Fogarty. All right, Dr. Rogers, go right ahead.

Dr. Rogers. Mr. Chairman, last year I had the privilege of reporting to you on three significant events in the history of the library. The first of these concerned our building program; the second concerned the initiation of a program to improve medical bibliographical services; and the third item concerned the transfer to the library of the Russian scientific translation program. With the successful completion of our construction program and occupancy of our new building on April 16, 1962, we have been directing major efforts toward continuing to improve our bibliographical services in the form of our medlars project and through the development of plans for broadening the base of our foreign language translation activities.

INFORMATION RETRIEVAL SYSTEM

Medlars has as its objective the development and implementation of a computer-based medical literature analysis and retrieval system. We are now working on the implementation phase of the project. Site preparation for the computer is completed and computer equipment was delivered today. By January of 1964, the system will be fully operational. The successful completion of this project will provide the medical sciences in the United States with the most powerful bibliographical apparatus in the world.

TRANSLATION PROGRAM

Our science translation program serves as a principal focus within the Public Health Service for meeting the needs of the American medical research community for access to the reports of foreign medical research published in infrequently read languages. While the translation of research papers, monographs, and journals is a principal activity, the program is concerned with strengthening of related practices of value in international communication including the preparation of review papers, the provision of abstracts of the foreign literature, and the provision of various devices such as directories and dictionaries which will make foreign research reports more readily available to American scientists.

BUDGET REQUEST

This estimate proposes a net increase of $478,000 and 25 positions related to the medlars project; and $153,000 for expansion of the scientific translation program. In addition, the estimate includes an increase of $35,000 for building maintenance, $47,000 for increased pay costs, and $28,000 for annualization and extra days' pay.

Mr. FOGARTY. You can place your full statement in the record.

(The statement follows:)

Mr. Chairman and members of the committee, last year I had the privilege of reporting to you on three significant events in the history of the library. The first of these concerned our building program; the second concerned the initiation of a program to improve medical bibliographical services; and the third item concerned the transfer to the library of the Russian scientific translation program. With the successful completion of our construction program, and occupancy of our new building on April 16, 1962, we have been directing major efforts toward continuing to improve our bibliographical services in the form of our medlars project and through the development of plans for broadening the base of our foreign language translation activities.

PROGRESS REPORT ON MEDLARS

Medlars has as its objective the development and implementation of a computer based medical literature analysis and retrieval system. We are now working on the implementation phase of the project. Site preparation for the computer is well underway, and equipment is on order for installation in March 1963. By January of 1964 the system will be fully operational. The successful completion of this project will provide the medical sciences in the United States with the most powerful bibliographical apparatus in the world.

DESCRIPTION OF MEDLARS

The heart of medlars is a digital computer. Information will be fed into the system through punched paper tape, which represents the indexing done by the library staff. This information will be converted to magnetic tape and manipulated in the computer. The magnetic tape so processed will be used to activate a very high-speed composing device which will be capable of producing photographic masters for printing.

The total volume of information processed by the library will be increased materially. The library now indexes 150,000 papers annually; medlars will accommodate 250,000. The average number of subject headings assigned will be increased, thereby permitting indexing at a greater depth. In addition, medlars will have controls enabling the library to sort by language, by date, by title of publication, and by geographic area.

MEDLARS PRODUCTS

The following products will be derived from medlars: (1) an increased high-speed composition capacity for the published Index Medicus; (2) recurring bibliographic listing of references selected in accordance with the predetermined requirements of particular research fields; and (3) an independent search and retrieval capacity to answer on request queries from individual research installations concerning new publications bearing on their immediate problems. In its first year of operation medlars will contain 180,000 references; this will increase by annual increments to the point where by 1969 over a million references will be stored on magnetic tape for searching.

IMPACT OF MEDLARS ON THE STRUCTURE OF MEDICAL COMMUNICATION

The impact of medlars on future developments in information storage and retrieval and the structure of medical communication is expected to be considerable. Medlars will provide a base for the centralized preliminary processing of information now conducted under circumstances of duplication and economic waste by multiple secondary publications. Further, medlars will constitute a new key to medical libraries generally and, when coupled with photoduplication service, will enable libraries to meet modern research requirements for information with unprecedented effectiveness.

BUDGET INCREASES RELATED TO MEDLARS

This estimate proposes a net increase of $478,000 and 25 positions to cover the equipment and personal services costs required to bring medlars to operational status by January 1964.

SCIENCE TRANSLATION PROGRAM

Our science translation program serves as a principal focus within the Public Health Service for meeting the needs of the American medical research community for access to the reports of foreign medical research published in infrequently read languages. It is, therefore, broadly oriented to the improvement of international communication in the biomedical sciences at the research level.

While the translation of research papers, monographs, and journals is a principal activity, the program is concerned with strengthening of related practices of value in international communication including the preparation of review papers, the provision of abstracts of the foreign literature, and the provision of various devices such as directories and dictionaries which will make foreign research reports more readily available to American scientists.

BROADENING THE BASE OF PUBLICATION SUPPORT

Initially, the program concentrated on communication activities related to the Soviet biomedical literature; it is currently establishing a broader base. The program will be concerned with meeting the needs of American researchers for significant new information published in those languages read by small percentages of American scientists. Thus, it will be concerned with the Japanese or the Czechoslovak literature, as well as the Soviet.

The program operates in cooperation with responsible research societies and groups and delegates insofar as possible the determination of specific needs of the research community to such groups.

The program has two subprograms. It supports domestic activities with appropriated dollars and it conducts, in cooperation with the National Science Foundation, the Service's foreign currency communication program authorized under section 104(k) of Public Law 480.

BUDGET INCREASE RELATED TO SCIENCE TRANSLATION ACTIVITIES

The 1964 estimate includes $153,000 for expanding existing projects for screening, translating, and publishing in English the results of Soviet medical research and for initiating projects covering literature from Japanese and other languages where the quality of research is high. To date, the program has caused to be traslated, republished and disseminated in the English language over 50,600 pages of Soviet scientific journal literature, 4,800 pages of monographs, and 30,500 abstracts from the scientific literature. Funds are requested in 1964 for the continuation and expansion of a program to select and republish significant research papers from foreign scientific journals and books at a level of 2,400 pages, to continue support for the preparation of 12,000 abstracts, and to accomplish related projects.

OTHER INCREASES

In addition to the increases requested for medlars and science translation activities, this estimate includes funds to provide for the cost of maintenance and minor repairs after expiration of manufacturers' warranties on mechanical, electrical, and elevator systems in the new building, increased pay costs, annualization of 16 new positions authorized in 1963, and 2 additional days' pay in 1964.

INCREASE REQUESTED FOR 1964

Mr. Fogarty. The appropriation for 1963 is $3,335,000 and the request for 1964 is $4,074,000, an increase of $739,000 and 25 positions.

Dr. Rogers. Yes, sir.

Mr. **Fogarty.** Last year you asked for funds to support 250 permanent positions and the full amount requested was appropriated, but this year the justifications show you have only 243 positions. What happened to the other seven?

Dr. **Rogers.** The other seven positions were lost due to the reduction to take care of the increased pay costs.

INFORMATION RETRIEVAL SYSTEM

Mr. **Fogarty.** I notice you only have two positions in 1963 for the medical literature analysis and retrieval system. I thought you would move faster than that. Have you had difficulties in getting it in operation?

Dr. **Rogers.** Two positions were added in 1963.

We have had lots of difficulties, but the program is still pretty well on schedule. The computer was delivered today. The engineers will be working around the clock 7 days a week and expect to have the wheels turning on the 27th of this month for us and then we can enter the state of really testing the thing out in detail.

Mr. **Fogarty.** All of the new positions requested for 1964 are in this area.

Dr. **Rogers.** Yes, sir.

Mr. **Fogarty.** What are your plans that require the big increase?

Dr. **Rogers.** We need a chief of data processing. We need a programing staff in order to maintain the programs written for this operation. We need additional indexers and searchers and we need console operators. It is this type of requirement that the new system brings in its wake that we must meet.

Mr. **Kelly.** When we made the presentation last year, Mr. Chairman, I think we made it clear that we would reach a stage of development in 1964—that the full utilization of this operation was going to require additional staff.

Mr. **Fogarty.** I remember now. When this is in full opreation will there not be less need for personnel in other parts of the library?

INCREASED WORKLOAD

Dr. **Rogers.** I don't think so, sir. The operation of this system with the machines is going to require about 50 percent more personnel in that area than previously required using manual systems. My own belief is that the increase in services that can be provided will be in the nature of 500 percent for that 50 percent increase in staff.

Mr. **Fogarty.** I have talked to two or three local doctors and they have been very high in their praise of the availability of material out there—these are doctors who are practicing in Washington. They have gone out of their way to pay a compliment to your library.

Dr. **Rogers.** In the other areas of the library we still have the problems of providing hard copies of materials that people want to see. Since we have moved to our new building our load in this area has gone up considerably. We have 80 percent more people coming into the library now than when it was downtown. We have 20 percent more requests that they make to us. We have 20 percent more requests for hard copies on interlibrary loan—hard copies that we send all over the country—since we have been in our new location, although it is hard to explain why interlibrary loans should have gone up that much due to the change.

Mr. FOGARTY. I think that is quite a record. I think it is an excellent one.

Is there anything else you want to say?

Dr. ROGERS. No, sir.

Mr. FOGARTY. Thank you very much.

FRIDAY, MARCH 15, 1963.

NATIONAL HEALTH STATISTICS

WITNESSES

DR. FORREST E. LINDER, DIRECTOR, NATIONAL CENTER FOR HEALTH STATISTICS

LOUIS R. STOLCIS, EXECUTIVE OFFICER, NATIONAL CENTER FOR HEALTH STATISTICS

DR. LUTHER L. TERRY, SURGEON GENERAL

HARRY L. DORAN, CHIEF FINANCE OFFICER

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
11 Personnel compensation:			
Permanent positions	1, 739	2, 133	2, 474
Positions other than permanent	54	45	57
Other personnel compensation	27	22	56
Total personnel compensation	1, 820	2, 200	2, 587
12 Personnel benefits	138	165	192
21 Travel and transportation of persons	246	195	307
22 Transportation of things	18	19	22
23 Rent, communications, and utilities	161	216	301
24 Printing and reproduction	73	96	117
25 Other services	380	556	521
Services of other agencies	1, 504	1, 560	1, 785
26 Supplies and materials	36	40	46
31 Equipment	112	102	72
Subtotal	4, 488	5, 152	5, 951
Deduct quarters and subsistence charges	1	2	2
Total obligations	4, 486	5, 150	5, 949

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	299	365	379
Full-time equivalent of other positions	6	5	6
Average number of all employees	280	318	356
Number of employees at end of year	307	354	379
Average GS grade	6. 9	7. 3	7. 4
Average GS salary	$6, 284	$6, 804	$6, 810

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
National vital and health statistics (program costs, funded) [1]	4, 398	5, 228	5, 949
Change in selected resources [2]	88	−78	
Total obligations	4, 486	5, 150	5, 949
Financing: Unobligated balance lapsing	156		
New obligational authority (appropriation)	4, 642	5, 150	5, 949

[1] Includes capital outlay as follows: 1962, $126,000; 1963, $110,000; 1964, $65,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $210,000 (1962 adjustments, −$16,000); 1962, $282,000; 1963, $204,000; 1964, $204,000.

General Statement

Mr. Fogarty. The committee will come to order.

We have before us this morning representatives from the National Center for Health Statistics. Dr. Linder, do you have a statement?

Dr. Linder. I have a statement here which I can leave for the record, if you wish.

Mr. Fogarty. All right.

(The statement follows:)

Mr. Chairman and members of the committee, in my past appearances before you I tended to emphasize the particular areas of my responsibilities in the National Center for Health Statistics which were then absorbing the major portion of my attention and that of my principal subordinates. These presentations reflected my judgment regarding the order in which I should approach the organization, staffing, and program of the Center from the time of its creation in August 1960.

Understandably, in the early history of the Center our energies were devoted primarily to the form of the organization. It was necessary to develop carefully the skeletal outline of the establishment and thus to predetermine the directions of its later growth. Carefully selected staff was then added, procedures were developed, reporting channels determined, and attention was given the host of management and administrative problems which characterize the early years of any new organization. All of these efforts continue today, of course, and will go on in the future as we seek constantly not only to find answers to problems which attended the birth of the Center or have developed since, but also to find more effective and efficient means to accomplish our goals. The urgency of the effort has passed, however, and operations in these areas will henceforth be more routine and less demanding of top management's attention.

There was also from the beginning of the Center's existence an awareness that its ultimate program goals could not be attained unless modern data processing techniques were utilized. Indeed, this fact was one of the considerations leading to the creation of the Center. Activities in this area tended to concentrate in the second year of the Center's life. During this period our energies were devoted to the preparation of a site for our computer equipment, the recruiting and training of staff to program for and operate it, and the careful planning of conversion of our work to the new technology. Problems associated with this effort have been solved. Our computer installation is fully operational, conversion of work to it is on or ahead of schedule, and the management of the program has been largely assigned to those directly responsible for it.

These developments have made it possible for me to turn my attention to a third priority item and one which I have been impatient from the beginning to undertake. This item involves our efforts and activities in making our statstical materials available to the numerous agencies, organizations, and individuals in the varous professions that have need for data. I expect to devote the remainder of the current year and much of the budget year to this problem.

It has long been my position that an organization such as the National Center for Health Statistics has not achieved its goals and has not justified its existence until it has put the published results of its efforts into the hands of those who need the information. Thus our end product is publication and our publications must be as professionally competent, as timely and as comprehensive as we can make them.

To carry out these objectives, one of my first steps was the recent consolidation of the publications staffs of the two major Divisions of the Center into one group which will for some time report directly to me. This change will permit my close supervision of the scope and quality of our publications, resolve certain problems of variations in workload, and insure the availability of technical competence to all components of the Center. In addition, I have replaced the several series of publications under which material of the Center was previously made available with a new Center-wide series. This new series will provide a publication outlet for all units of the Center, unify format, and make it easier for users of NCHS reports to select the type they wish to receive. Simultaneously, Center mailing lists are being circulated and consolidated with a view to emphasizing selective distribution rather than mass distribution of our reports.

The 1964 budget for the Natonal Center for Health Statistics is $5,949,000, an increase of $799,000 over 1963. Of this amount, $190,600 represents the cost of the classified pay increase authorized last fall. While the detailed justification for the program portion of this increase is already before you in printed form I should like to devote a few moments to discussion of its major elements.

OFFICE OF HEALTH STATISTICS ANALYSIS

In my presentation to you last year I emphasized the importance of the concept on which this Office is based—that of profound analysis of health statistics data to determine its significance in relation to major public health problems. I used as an example a comparative analysis of recent trends in the death rate in various nations, a project undertaken cooperatively by our Office and medical statisticians in several other countries. This project is proceeding satisfactorily and was recently broadened to include a study of infant death rates. This study of infants mortality is an effort to determine why the United States lags behind many countries in the prevention of infant deaths. These studies will continue in 1964. In addition, the Office has begun work toward the development of a suitable index of health.

The approaching eighth revision of the "International Classification of Diseases" has increased the tempo of activity in preparing U.S. revision proposals. The coordination and development of revision proposals are major activities of this Office.

OFFICE OF ELECTRONIC SYSTEMS

A year ago I reported to the committee that an IBM model 1401 computer had been installed in the Center the previous December and that a more powerful 1410 system was scheduled for delivery in July of 1962. Developments since that report permitted an advance in the conversion and installation schedule I indicated. The 1401 computer was in full-shift operation shortly after its installation and utilization of that equipment increased sharply each month until it became evident that it shortly would be unable to cope with our ability to prepare work for it. Accordingly, we moved up the date of installation of the 1410 model to May of 1962. Soon after its delivery this system was also being utilized on nearly a full-shift basis and now is over a one-shift use.

One of the difficult problems in the transition to electronic equipment was the need to schedule carefully the transfer of data processing operations from outmoded equipment or computer equipment of another agency to our own computer facility. I am happy to report this transfer is on or even slightly ahead of schedule and that during fiscal year 1964 our computers will be producing processed data for every major statistical program of the Center.

The excellent record of equipment utilization in our computer installation and the relatively rapid transition to it from other processing equipment has an impact on the 1964 budget estimate, increasing machine usage cost by $57,000.

NATIONAL HEALTH SURVEY DIVISION

The series of health surveys authorized by the National Health Survey Act of 1956 continue to develop important information on many aspects of the health of the American people.

The Health Interview Survey, the oldest in the series, has now published 48 major reports on a wide range of health topics. Of these, 11 were published during the past year, including reports on chronic conditions causing disability; number of hospital discharges; illness among currently employed persons; and a series of reports on persons injured in accidents. This survey will continue its basic program in fiscal 1964. Budgetary needs for that year are estimated at approximately the same level as the current year.

The Health Examination Survey, an American innovation in the application of the technique of physical and clinical examination to a national sample of the population, also continues on its planned schedule. Field data collection in the first cycle of this survey was completed in December and analysis of the data is underway. This cycle dealt with a sample of the adult American population. During its operation a total of more than 6,000 persons were examined in 42 "stands" throughout the country. More than 85 percent of the individuals selected in the sample agreed to participate in the program—a far higher proportion than we expected. Much of the credit for the success of this cycle is attributed to the splendid cooperation we received from the medical societies and from public officials at the National, State, and local levels.

A second cycle, involving children between the ages of 6 and 11 will get underway in the next few months. In 1964 this survey will be operating at its optimum full-scale level with three types of activities underway simultaneously. These are (1) analysis and publication of data from one cycle; (2) field collection of data for a second cycle, and (3) initial planning of a third cycle.

The Health Records Survey is the newest of the three major activities of the National Health Survey Division. It differs from the surveys previously described in that it obtains health data, not from a sample of individuals, but from the hospitals, nursing homes, and related institutions which provide medical, nursing, and personal care. Much of the energies of this survey to date have been devoted to the compilation of a basic list of resident institutions and hospitals. This "master facilities list," which is still being developed and refined, now totals over 40,000 institutional names. It will serve as the basic source from which many types of statistical samples will be drawn.

This list is now being used for the selection of a sample to develop information on places which provide nursing or personal care and their patients. A second phase of this study is scheduled for 1964. During 1964, pilot work will also be undertaken on the sampling of short-term hospitals and the records of discharges of patients from these hospitals as the start of a continuing national sampling of hospital discharge records. In this and other record survey undertakings we have enjoyed excellent relations with the American Hospital Association. In 1964 also there is to begin a general survey of the institutional population and a study designed to test the completeness of the master facilities list.

NATIONAL VITAL STATISTICS DIVISION

For over 60 years the functions of the National Vital Statistics Division have provided the focus for Federal Government cooperation with the States in the collection of vital statistics and the improvements of registration of vital events. It is the only source of national vital statistics data.

As I indicated to you a year ago, a major initial concern after creation of the National Center for Health Statistics was a review, revitalization, and redirection of the program for vital statistics. A specific area I cited as requiring attention was that of the tabulation work of the program and the conversion of its processing to electronic computer methods. I reported encouraging initial progress in this area and pointed out that for the first time in many years we had been able to announce final data for the births of one year before the end of the following year. I am now pleased to inform you of an improvement over that rather modest accomplishment. Final mortality figures for 1960 were released only in October 1962. In November we were able to release 1961 mortality and natality figures. This illustrates the satisfying success we have had in bringing up to date the coding and tabulating phases of this work. We are now concentrating on the publications phase and hope for similar improvements there within the next year or two.

I also outlined in last year's presentation the serious problem of improving the quality and uniformity of our basic records which come to us from the 50 States, and emphasized the need for additional help to the States in registration methods. We have completed plans for a broadened effort in these areas and reflected them in the budget request. These plans include a new series of regional institutes, designed to train staff of State offices in new operational techniques by means of relatively short conference-seminar sessions at which we hope to make available outstanding experts in fields of particular interest to such staff. This training will help the State organizations with one of their major problems, but others will remain. We hope to develop a program to deal with these in the future.

DEVELOPMENTAL AND EVALUATION WORK

The field of statistics, like other sciences, is never static. New concepts, new techniques, new theories are constantly emerging. These, when made available to the operating statistician make yesterday's impossibility today's routine. The National Center for Health Statistics, as a major Federal statistical program, is responsible not only to keep itself and its staff informed on these developments, but to play a major role in stimulating them and guiding or designing them to suit the needs of its own programs. Similarly, a responsible statistical organization must always guard the integrity of its product. We must be constantly examining our own efforts and we must arrange when possible for their examination by competent and objective appraisers from outside our own organization. Only in this way can we assure ourselves and others that we are gaining maximum returns for the resources provided us.

These two functions, which we term development and evaluation, have not in the past received the attention they merit. The 1964 estimate includes funds to strengthen a continuing program in these areas.

Total estimate for NCHS

To carry out the program outlined briefly above, the 1964 estimate for the NCHS is $5,949,000. The details of this estimate have been provided in our justification.

I shall be glad to answer any questions that the committee may have.

Dr. LINDER. Mr. Chairman and members of the committee, each of my past presentations to you has emphasized the areas of my responsibility which were absorbing a major portion of my attention and time.

Problems in these broad areas have now been substantially solved. We have completed our initial efforts in organization, in creating administrative channels and processes, and in installing computer facilities. This makes it possible to turn our attention to what I regard as our next priority problem—improvement of the publication and distribution of our statistical materials.

I believe that an organization such as ours has not achieved its goals or justified its existence until it has put the published results of its efforts in the hands of those who need the information.

Thus, we must make our publications as professionally competent, as timely, and as comprehensive as possible; and we must insure their complete but selective distribution. This problem will receive attention during the next year or so.

Regarding our continuing programs, the planned conversion of our data processing to computers is on or even slightly ahead of schedule. The Office of Health Statistics Analysis is continuing its work in the comparative analysis of recent trends in death rates, has begun work on a suitable index of health, and is preparing U.S. proposals for the eighth revision of the International Classification of Diseases.

SURVEY ACCOMPLISHMENTS

The surveys authorized by the National Health Survey Act continue to develop important health information. The Health Interview Survey has now published 48 major reports. The Health Examination Survey has completed the field data collection on its first cycle of operations and a second cycle, involving children, will get underway shortly.

The Health Records Survey, based on information obtained from hospitals, nursing homes, and related institutions, has, to date, devoted its energies primarily to the development of a basic list of over 40,000 resident institutions and hospitals.

This list will be used for selection of various samples for surveys including one which is now underway to develop information on places which provide nursing or personal care for their patients.

NATIONAL VITAL STATISTICS DIVISION

Revitalization of the program of the National Vital Statistics Division continues. Last year I informed you we had been able to announce final data for one year's births before the end of the following year. We have now significantly improved that performance. Final mortality figures for 1960 were released in October 1962, but in November of the same year, only one month later, we released final 1961 mortality and natality figures.

To improve the quality and uniformity of our basic records, we have completed plans for a series of regional institutes for the training of staff of State offices.

The 1964 budget for our organization includes funds to strengthen a continuing program in developmental and evaluation work. Such a program is necessary to develop the techniques essential in our programs and to guard the integrity of our product.

INCREASE REQUESTED FOR 1964

To carry out our 1964 program we are requesting $5,949,000. I will be glad to answer any questions.

Mr. FOGARTY. Thank you, Doctor.

The appropriation for 1963 is $5,150,000 and the request for 1964 $5,949,000, an increase of $799,000 and 14 positions.

NATIONAL HEALTH SURVEYS

The largest item of increase is $400,000 for the National Health Survey Division. Would you tell us what you are doing now and why you need this increase?

Dr. LINDER. In the National Health Survey, we have three basic operations underway.

One is the Health Interview Survey, which is a nationwide sample where we talk to people about their health problems and what they do about it. This survey was started at the very beginning of the survey program after the act was passed in 1956 and is more or less at its continuing level.

HEALTH EXAMINATION SURVEY

Then we started the health examination survey which is a survey of a much smaller sample in which we bring people to a medical facility for the purpose of giving them various tests and measurements of a quantitative character.

Mr. FOGARTY. For what reason?

Dr. LINDER. This survey, of course, would develop diagnostic information which you cannot get in an interview survey. We develop base line distributions of physiological and physical characteristics.

Mr. FOGARTY. What are some of the benefits of a survey like this?

Dr. LINDER. Of the Health Examination Survey?

Mr. FOGARTY. Yes.

Dr. LINDER. Well, in this Health Examination Survey, for the first time, we are able to get the characteristics of people on a nationwide basis. In other words, the data that are developed from this survey are a type of material that has never been available before because we can say that these distributions, these characteristics, these levels of blood pressure, height, weight, and the relationships between such factors are truly characteristic of the American people and not just the people in this particular area or this particular hospital, or this particular medical practice.

This kind of information is essential and is used for many purposes. Primarily I would say that it forms the basic norms of American physiology, and the medical condition of the American people, against which abnormal conditions are compared.

COMPILATION OF NATIONAL FACILITIES LIST

Now, the third activity and the one which involves the largest increase for fiscal 1964, is a collection of activities which we have described as the health records survey. Up to now, we have been busy developing a list, which we call the national facilities list. This is the only place, and we are really the only agency, that can get together the names and addresses and characteristics of every medical care institution in the country.

Nobody else can do this. This list was developed by collating information from diverse resources such as the Census Bureau, which has a list of institutions from their census, the Social Security Administration which has a list of institutions, our own Vital Statistics Division which has a list of institutions where people die or are born, and the Division of Hospital Facilities, which has a list of institutions from the Hill-Burton program. We have collated these lists, and we now have a list that is more comprehensive than any other that can be compiled. We are the only people that can do it because some of these lists represent data that are legally confidential.

NATURE OF BUSINESS QUESTIONNAIRE

Now, we have circularized this list of 40,000 with a questionnaire which we call nature of business questionnaire . We have asked what kinds of institutions they are, how big they are, how many beds they have.

Just last week we made our first preliminary tabulation and provisionally I can say that in this country there are 2,500,000 beds in institutions where people stay largely for medical reasons. Now, for most of these institutions, very little is known. There are nursing homes, there are small institutions. We know something about the hospitals, and we know something about the mental institutions, but the big part of the other group of institutions is something about which little is known.

It is this area we are intending to explore.

CONTRACT ACTIVITIES

Mr. FOGARTY. What part of the work will be done on a contract basis, and with whom do you contract?

Dr. LINDER. Actually we make very large use of contract services. In 1963, we contracted for over $2 million worth of services from other agencies. This is over 40 percent of our total budget. Over $1,500,000 of this money is in contracts with the Bureau of the Census.

Now, one reason for our contracts with the Bureau of the Census is that they have a field organization which is maintained for various purposes and, by using this field organization, we can save the cost and overhead of setting up duplicating field offices.

So the big bulk of our contract at work is with the Bureau of the Census. We also do contract work with various universities.

NATIONAL VITAL STATISTICS

Mr. FOGARTY. The only other significant increase is $272,000 for the National Vital Statistics Division.

Why is this necessary?

Dr. LINDER. A good part of that, of course, is built-in increase due to pay increase and so forth. This Division has a fairly large clerical staff which involves a large salary budget.

The other biggest element of the increase in the Vital Statistic Division has to do with developmental and evaluation work which we wish to undertake there.

The health survey organization, from the very beginning, and by the law that created it, was directed to do work on the development of new methods. The National Vital Statistics Division, on the other hand, was established approximately 60 years ago, in the Bureau of the Census, and it was transferred to the Public Health Service in 1946. And with it, it brought its old equipment, its old furniture, its old methods—primarily its old methods.

When the National Center for Health Statistics was created, that Division was put into the Center and I was given the responsibility for revitalizing and moderning these old procedures.

USE OF COMPUTER

The big thing we have done of course is to get the tabulation work on the computer and I have already told you how this has accelerated our product.

The next step that remains here is to have the computer prepare the copy, which we send to the Government Printing Office for publication. Our volumes come out in very big volumes, like this [indicating]. At the present time these volumes are handtyped. In the course of the next year I expect to have the manuscript for those volumes printed right on the computer.

Mr. FOGARTY. I see.

DEVELOPING A SUITABLE INDEX OF HEALTH

On page 31 you speak of "Developing a suitable index of health" and the design of mathematical models of health. Will you explain what this means, what you are doing in developing these things, and why they are important?

Dr. LINDER. Yes, sir.

For many years and even now, if anybody asks about the health of the American people, the only thing we can really tell them is what the death rate is.

The death rate is so much this year, the death rate was so much last year. The death rate is now at a pretty low level, it is a fairly static figure, it is not really an indication of what the health of the American people is.

If I were now to try to describe the health of the American people, I would have to talk in terms of hundreds of different numbers that indicate hospitalization, days lost from work, and a great variety of other variables. What we are looking for, and what we are trying to find a theory for, is some way to condense this multiplicity of numbers into something like the death rate so that this can be used as an expression, as a measure of the progress that is being made in improving the health of the American people. This is a research project, it has to do with developing an index number of some kind that will have some meaning.

REGIONAL TRAINING INSTITUTES

Mr. FOGARTY. You mention on page 38 'A newly inaugurated program of regional training institutes."

What are these institutes?

How much are you spending on them?

Dr. LINDER. The Vital Statistics Division has the responsibility of cooperating with and working with the State vital statistics offices in the public health departments of every State. We have been working with those departments, as I said, for 60 years. We do a great variety of cooperative things with them, in order to develop our national vital statistics system into something that is standardized.

With the development of computers and new methods of handling material, every one of the State offices is confronted with the same problem, what do they do with their vital statistics, how do they handle their records? They are going to get computers. How are they going to process their work with modern methods?

We are trying to set up a series of small institutes where we can give them the benefit of the best advice in the country on how to handle these problems, in view of new developments in recordmaking.

Mr. FOGARTY. Mr. Denton.

DUTIES OF NEW PERSONNEL

Mr. **Denton**. You are asking for 14 additional employees, 6 in the National Health Survey Division and 6 in the National Vital Statistics Division; 1 in the Director's office and 1 in the publication staff office.

Dr. **Linder**. Yes, sir.

Mr. **Denton**. Now, what are these employees?

Are they Public Health officers? Are they technical employees? Are they clerical help or what are they?

Dr. **Linder**. I can name them one by one but I can summarize, I think, more briefly. For the most part they are clerks or statisticians, with the exception of the health examination survey where, when we start a survey of children in July, we will need a dentist for the dental examination of children and we will need two psychologists, because in the plan for the examination of children we intend to give some mental tests of the kind which require psychologists.

Mr. **Denton**. How have you gotten along without them up until now?

Dr. **Linder**. Well, up until now, the health examination survey has been dealing with adults and we have not worried about the intelligence of adults.

We have not had these particular——

EFFECT OF UTILIZING COMPUTERS ON NEED FOR PERSONNEL

Mr. **Denton**. I would think if you had computers that were doing the mechanical work, that that would lead to a decrease in the number of employees instead of an increase.

Mr. **Laird**. It usually works the other way, I have noticed.

Mr. **Denton**. What advantage are these computers if they require more help than you had before?

Dr. **Linder**. Well, I think in our case the point has to be made that whether computers take more or less people for the same program, our program is a new program.

The Center was only established 3 years ago. This is my third appearance before this committee.

Mr. **Denton**. But you kept statistics in the Public Health Service for years, probably that is one of the first things they did; was it not?

Dr. **Linder**. No, as I said, the National Health Survey was created by a new law in 1956.

Mr. **Denton**. But you kept health statistics at the Public Health Service; did you not?

Dr. **Linder**. The work we are doing in the Center was not kept there, except for the Vital Statistics Division which was in the Census Bureau.

Mr. **Denton**. This was transferred to you from the Census Bureau?

Dr. **Linder**. That is correct. Yes.

Mr. **Denton**. Go ahead.

Dr. **Linder**. Irrespective of the point of whether computers require more or less people—I think Mr. Laird has a point here—I think the essential point is that this is a new program and is a growing program. We are doing many things now that we were not doing several years ago.

The health examination survey is a new activity which was started several years ago. The health record survey is a new activity which is just starting on a pilot basis this year. So the total workload, the total uses that we are making of our material are expanding very greatly and will continue to expand.

Mr. DENTON. Now, where do you have your offices here in Washington?

Dr. LINDER. My office is in the South Building, the headquarters.

Mr. DENTON. Do you have these computers there?

Dr. LINDER. Yes, our computers are in the North Building.

LOCATION OF PERSONNEL

Mr. DENTON. You have 365 employees now and you want 379 and an increase of $799,000.

How any of those employees are here in Washington and how many are in the field or out in the regions?

Dr. LINDER. We have no field employees as such.

We do have some employees who work on the health examination survey who are headquarters employees but do some work in the field.

Mr. DENTON. You have 365 employees in the South Building here in Washington?

Dr. LINDER. All of our employees are located here in Washington, yes.

Mr. DENTON. How many offices do you have there?

Dr. LINDER. I do not believe I know offhand. We have about 42,000 square feet of space in total. A lot of this is large open space.

Mr. DENTON. You said most of your work was done on a contract basis with the Census Bureau.

In page 23 of the justifications it seems that practically all of your expenditures are for personal services. Where is that reflected in the justifications?

OTHER SERVICES

Dr. LINDER. The contract work shows under item 25, other services. And you will see there that there is $2,306,000, estimated for fiscal 1964 and $2,116,000 in 1963.

Mr. DENTON. Well, I guess I am—I am not an accountant, but why is not that set out as what it is instead of being called other services?

Dr. LINDER. Mr. Denton, I am not an accountant either. I guess we will have to ask an accountant.

Mr. KELLY. Do I have to plead guilty?

This is a Government-wide classification. Every one of these titles that we have used is a title that is used by every agency in the Federal Government. It has to be a grouping that is an all-inclusive term.

Mr. DENTON. Well, is there any rule they have to make them unintelligible?

I guess that is all.

Mr. FOGARTY. Mr. Lesinski.

Mr. LESINSKI. Is not this the catchall with all the "cats and dogs" that we might have, Mr. Kelly?

Mr. KELLY. Well, really, it covers every form of contract that the Federal Government makes. They are all grouped in this title.

Mr. Lesinski. I would not accept that because you also have grants with contracts in other fields.

If this "other services" is for IBM equipment, I think that should be so classified.

Effect of Utilizing Computers on Personnel Needs

Getting to the point Mr. Laird had mentioned, it is true, ADP equipment does reduce the number of employees by the simplicity and rapidity of getting out the data, but more programs increase the number of employees.

Getting back, you are going contrary to the mandate of Congress.

I issued a report some 2 years ago where all agencies were to cut down on employees if they had computer equipment in their agencies. I find you are acting contrary to the will of Congress at this point.

Have you seen that report? You had better look into it.

Dr. Linder. I will do that.

Mr. Lesinski. I will make it a point that all of you will get a copy of that report—Mr. Kelly, Dr. Terry, Dr. Shannon—because from what I see here, you are actually working contrary to the mandate of Congress in these things.

Dr. Terry. Mr. Lesinski, I would say in that respect that if the Congress continues to authorize increased programs for us, they cannot expect us to carry out those programs without giving us proper support.

Now, actually, the question of whether we use computers or not does not have anything to do with most of these increases in employees.

It is actually increased program activity, it is in other areas, to feed material in effect into the computers that is responsible for these.

Mr. Lesinski. In other words, you concur with what I said, that the computers actually need less employees because of the simplicity of getting information together but you have so many more programs going on?

BASIS FOR APPROVING USE OF COMPUTERS

Mr. Kelly. We would not approve the installation of computers, Mr. Lesinski and the Secretary's Office does have to approve every computer, if they wanted to do the same job which they are now doing, unless the studies on the use of the computer showed that this would produce a more economical result.

I think that the consequence that both Mr. Laird and Dr. Linder spoke of, is that it is true that very, very frequently you find that when you have a computer you also usually have more people. This is true because the job that you want to do is the job that you are not now able to do. In addition, the computer makes it possible not only to do what you are now doing, but also to expand and extend that operation to perform things which are not now being done.

USE OF COMPUTERS IN PAYROLLING

I think I have a good illustration. We are trying today to put into effect an operation where we will use a computer for central payrolling. The cost per payroll clerk, the cost per person payrolled, will be a reduction of somewhere between one-third to one-half of what we are now spending to do this job.

During the period in which this is being done, two things are happening. One is that the number of people to be payrolled is increasing and, although the cost per person-payroll goes down, the total cost does not go down proportionately because of paying more people.

The second thing that occurs is that we now have an opportunity to handle personnel statistics in a way in which they have never been handled before in the Department because of the availability of the data on computers. We can utilize this resource that is available to produce useful management data.

Mr. LAIRD. Probably be able to find some of the lost letters over in the Department.

Mr. LESINSKI. In other words, Mr. Kelly, you have said the same thing Dr. Terry and I said.

Do you want to add something, Mr. Denton?

Mr. DENTON. Yes. We have had a number of agencies come in and give us figures showing that they have reduced expense by using computers on payrolls. And they point out the fact there are a good many deductions that did not exist before, such as retirement pay, health insurance, life insurance, and those things.

By using computers, they can do it much cheaper.

Mr. KELLY. That is correct, sir.

Mr. DENTON. That is one problem we have in industry, that machines are displacing people and we call it automation which causes us a great deal of trouble. I have a little difficulty seeing why that does not apply to government.

I realize you have expanded your program but it does seem to me those machines should show some saving in manpower.

Mr. KELLY. There is the question related to the payroll operation which I spoke of, wherein we will have a reduction of somewhere around 150 employees. We have worked out arrangements where everybody in the Department now engaged in the performance of this work would be placed in jobs in their current location and at their current salaries. We are able to do this because we can take advantage, No. 1 of expansion, and No. 2, of positions that vacate by reason of turnover and so forth, in addition, we feel we have an obligation to our employees.

However, in terms of the net employment of the Federal Government, there will be a reduction as a result of the utilization of technological improvements in equipment. I might add, that this would have occurred in a very large degree in Dr. Linder's organization, except that he had so much of his work already on machines in the Census Bureau before he got his own computers.

Mr. LAIRD. Mr. Lesinski, would you yield to me?

Mr. LESINSKI. I will yield later.

ADVANTAGES OF AUTOMATION IN GOVERNMENT AND INDUSTRY

In the 1880 census, the population of the United States was approximately 50 million.

They had 1,000 people, a thousand people employed by the Census Department computing the results of 1880 census and it was not completed until the 1890 census was taken. This was all done manually. Today our census report comes in roughly 3 or 4 months or thereabouts after the census because of computers.

Getting to the point Mr. Denton has raised, we can send coal, because of automation, to England at little less than $5 a ton, than they can produce it in Wales. Because of automation.

The big trouble in England is the cost of steel is too high because the cost of coal is too high. It takes about one ton of coal to produce one ton of steel.

If the Government will allow import of American coal to England they could produce steel a lot cheaper and they could compete on the world markets. This is something they will have to consider in their thinking.

Mr. Laird, do you have a question?

INCREASED RESPONSIBILITIES IMPOSED BY CONGRESS

Mr. LAIRD. I was interested in a reply that Dr. Terry gave to you with regard to the Congress increasing the responsibilities and the duties of the Public Health Service by authorizing new programs.

I think the record will be a lot better if we could specifically state what the increases required by the Congress were for this year as compared with last year in this area and then also take the Library of Medicine where we are putting in a computer and we need 25 more people.

You answered the question by stating that the workload was increased because of action of the Congress. What duties did the Congress require of the Library of Medicine this year as compared with last year?

Dr. TERRY. In the first place, I would like to make it clear I do not intend to indicate that these increased responsibilities originated in the Congress.

I was rather speaking of the fact that program developments are approved by the Congress, any expansion of our activities.

And this is the point that I would like to make.

If we propose it and the Congress agrees to it, they must, of necessity, expect that it will require increased activities in order to carry out those additional programs.

This is the sort of thing I was referring to, Mr. Laird.

Mr. LAIRD. It might be a good idea to just list a few, say for the Library of Medicine and also here for Dr. Linder. What are some of those that have been approved by the Congress requiring increased activities which require more people even though you are putting in computers.

Would not the record read a little clearer if we had the examples?

Mr. KELLY. I think it might very well. I also think Dr. Linder could take his area and tell you what the increased program activities are and what are——

Mr. LAIRD. That have been approved by Congress. I wanted to get these that have been approved by Congress. What are those?

LEGISLATIVE ACTION ON NATIONAL HEALTH SURVEY ACT

Dr. LINDER. Well, the major part of our developing program originates from the National Health Survey Act of 1956. And this act was passed by Congress as a special law.

Mr. LAIRD. I understand, I am talking about this year compared with last year.

Dr. LINDER. The establishment of the National Health Survey Act anticipated development of a series of activities which are listed in the act, the kinds of things we are supposed to do. Now, it is obvious that we could not start those all the first year because of many technical and operating problems that had to be solved.

Mr. LAIRD. This is not something the Congress had done lately; this goes back to the original authorizing act.

Dr. LINDER. Yes, in 1956.

Mr. LAIRD. So the increase in program you can anticipate goes back to that action of Congress, back in 1956.

Dr. LINDER. That is correct.

Mr. LAIRD. I see.

Well, I did not understand that.

What about the Library of Medicine now, does that go back to the authorizing act?

COMMITTEE RECOMMENDATIONS ON LIBRARY OF MEDICINE

Mr. KELLY. I think that in the Appropriations Committee's report for each of the last 2 years, perhaps 3 years, the committees in both the House and Senate have been endeavoring to persuade the Department and Public Health Service to improve the whole problem of medical communications. The first area in which significant progress in this connection has been made is the development of a capability to improve the communications through the use of the resources of the Library of Medicine.

It is not automating which was done before but it is the establishing of an automated system which would permit the performance of a significantly greater amount of communications than has heretofore been experienced. As a matter of fact, I feel confident that the increase that is in the 1964 budget was identified as an increase that would be needed when we reach that stage of the development of the computer. The Congress approved funds in both 1962 and 1963, to further this program, and 1964 reflects the fulfillment of it.

Mr. LAIRD. I would just like to say, Mr. Kelly, I looked through the justifications here and whenever there is a significant statement in either the House or the Senate Report which might require an addition in the next year, it is always set forth in the justifications in a separate section under the heading "significant items in House and Senate appropriations committee reports."

In these two items I find no significant item in the House or Senate appropriations committee reports listed in the justifications.

I know how carefully you go over these justifications and I am sure if there was any significant statement that would affect this budget, you would have had it in your justifications.

Mr. **Kelly**. I regret the oversight but I think you will agree that the committee has been exhorting us to improve our capabilities in the field of health communications.

EFFECT OF UTILIZING COMPUTERS ON NEED FOR PERSONNEL

Mr. **Laird**. Well, at the time we approved going ahead with these computers we felt that it was going to have some effect upon the continuing increases of personnel in the department.

The Secretary of Labor Mr. Wirtz, testified before our committee at some length on the problem of automation; and he felt certain that many individuals were going to be losing jobs and that we would have to intensify our retraining program, because of computers and other automatic equipment.

As I look over this budget, the fear that Mr. Wirtz expressed before this committee may apply outside of Government, but I do not think Mr. Wirtz has anything to worry about at all when it comes to the Federal Government, because every place where we approved computers last year, we find we have increases in employees requested this year.

So I think I had better write Mr. Wirtz and tell him not to worry about the Federal Government in this area but just spend his time and efforts on private business.

Maybe you could put an endorsement on that letter for me.

Mr. **Kelly**. May I comment, Mr. Laird, so that we do not leave the record showing that the use of the computer does not reduce the amount of personnel required to do the same job?

Mr. **Laird**. I just base that on the facts in these justifications.

Mr. **Kelly**. Let me just say that there is no question that the Department of Health, Education, and Welfare is an enlarging organization and is performing a great many functions today that it did not perform very long ago. For example, in the Bureau of Old Age and Survivors Insurance, which will be before you later today, studies in the use of computers—and they are one of the earlier lead organizations in the development of the use of computers in data processing type of activities—disclose that they would require in the neighborhood of 5,000 more employees than they now have, if they were performing at the same production rate per man-year as they performed in 1950.

Therefore, the computer provides the benefit of significantly increased productivity, a decrease in manpower is not reflected. On the contrary, there is an increase in manpower because we are producing more.

Mr. **Laird**. I am sorry, I really interrupted Mr. Lesinski. I appreciate your yielding to me, Mr. Lesinski. I am sorry I took up so much time.

Mr. **Lesinski**. That is all right, Mr. Laird.

RENTAL VS. PURCHASE OF COMPUTERS

Do you rent or do you own the computers?

Dr. **Linder**. We rent the computers.

Mr. **Lesinski**. It has been found in Census and others, it is cheaper to own now, although originally it was cheaper to rent because of the fact the equipment was not standardized and needed development. But now they have it pretty well standardized and the equipment is pretty well, you might say, organized and it is cheaper to purchase.

Mr. KELLY. We are making a study, on a departmentwide basis, of each computer.

Mr. LESINSKI. It is true that automation does displace workers, the point being 2 years ago one department in the VA had 816 employees displaced. They were either allowed to train for new jobs or take other jobs available in the VA.

Well, this left only 69 that were not reemployed in other portions of the VA.

Basically, what the computers do or allow you to do, with less men you can do a lot more work, and therefore get in a lot more fields. This is a thing that is growing more and more and this is my concern as to how far we are going to go.

I have not had time for any further questions, Mr. Chairman.

I appreciate it very much.

Mr. FOGARTY. Mr. Laird.

Mr. LAIRD. Mr. Chairman, I think I have handled my questions under Mr. Lesinski's time. I appreciate his yielding.

Mr. FOGARTY. Is there anything else you want to say?

Dr. LINDER. No, sir.

Mr. FOGARTY. Thank you very much.

Who is going to handle the item for retired pay of commissioned officers?

Dr. TERRY. Mr. Doran.

RETIRED PAY OF COMMISSIONED OFFICERS

WITNESSES

HARRY L. DORAN, CHIEF FINANCE OFFICER

DR. MYRON D. MILLER, CHIEF, DIVISION OF HOSPITALS

DR. LUTHER L. TERRY, SURGEON GENERAL

JAMES F. KELLY, DEPARTMENT BUDGET OFFICER, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Object classification

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
13 Benefits for former personnel	2,360	2,749	3,229
25 Other services		1,905	1,974
Services of other agencies		1,130	1,233
Total obligations	2,360	5,784	6,436

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. Retirement payments and survivors' benefits	2,360	2,749	3,229
2. Dependents' medical care		3,035	3,207
Total program costs, funded—obligations	2,360	5,784	6,436
Financing: New obligational authority (appropriation)	2,360	5,784	6,436

GENERAL STATEMENT

Mr. FOGARTY. You have a statement, Mr. Doran.

Mr. DORAN. Yes, Mr. Chairman, I have a short statement. I can make it even shorter if you wish.

Mr. FOGARTY. We will place it in the record.

(The statement follows:)

Mr. Chairman and members of the committee, this in an indefinite appropriation which authorizes such amounts as may be necessary for payments to retired commissioned officers of the Public Health Service and to survivors of deceased retired officers. It also provides for payments for medical care furnished outside the Service to dependents of eligible personnel of the Coast Guard, the Coast and Geodetic Survey, and the Public Health Service, and to retired personnel of these services in uniformed services facilities.

Benefits to retired officers are authorized by section 211 of the Public Health Service Act, while those to survivors are authorized by the Uniformed Services Contingency Option Act of 1953. The amounts of these benefits are fixed by law and payments are not subject to administrative control. The estimated requirement of $3,229,000 for these payments is based on a projection of beneficiaries now being paid with adjustments for anticipated additions and terminations. On January 1, 1963, 415 retired officers and 36 survivor annuitants were on the roll. It is estimated that the number of retired officers will reach 443 by June 30, 1963, and 500 by the end of fiscal year 1964. The projection contemplates no change in the current number of survivor annuitants.

The payments for medical care of dependents are also mandatory expenses of the Service. They arise because a dependent or a retired person uses an approved medical facility selected in accordance with the Dependents' Medical Care Regulations. Prior to fiscal year 1963, a specific allowance for such care was included in the appropriation "Hospitals and medical care." Because of the relatively uncontrollable nature of the program, obligations usually exceeded the amount of the limitation and it was necessary to seek one or more supplementals each year. Last year the Senate committee proposed, and the conference committee adopted this arrangement for an indefinite appropriation, which will eliminate the need for supplementals in the future. The 1964 estimate of $3,207,000 is based on an estimated average daily patient load of 93 in contract hospitals and 102 in Federal hospitals.

The total estimate for 1964, covering the two program categories described above, is $6,436,000. I shall be glad to attempt to answer any questions which you may have.

INCLUSION OF DEPENDENTS' MEDICAL CARE

Mr. DORAN. One significant change has taken place since we reported to the committee last year. At that time this appropriation included funds only for retired pay of the commissioned officers.

This year it includes money for dependents' medical care. When we appeared before you last year, it was in the appropriation "Hospitals and medical care," in the Bureau of Medical Serices. Our experience with the regular appropriation was that, since the obligations are uncontrollable, it was necessary to come back at least once every year and sometimes twice for a supplemental appropriation. The Senate proposed language that would include funds for dependents' medical care in this indefinite appropriation and the conference committee accepted that proposal, and it is working out very well.

Mr. FOGARTY. You have no problems?

Mr. DORAN. That solves our problems so far as both of these items are concerned.

Mr. FOGARTY. Mr. Denton.

Mr. DENTON. No questions.

Mr. FOGARTY. Mr. Lesinski.

PERSONNEL COVERED BY RETIREMENT PLAN

Mr. LESINSKI. Mr. Doran, these retired officers are from what agency?

Mr. FOGARTY. The Public Health Service.

Mr. LESINSKI. Public Health Service. Covering all Public Health Service?

Mr. DORAN. All of the commissioned officers of the Public Health Service, Coast Guard, and Coast and Geodetic survey.

Mr. LESINSKI. And they also cover the survivors?

Mr. DORAN. I am sorry, sir; retired pay is only for retired officers of the Public Health Service.

Mr. LESINSKI. Public Health Service.

Mr. DORAN. Right.

Mr. LESINSKI. NIH?

Mr. DORAN. Yes, sir.

Mr. LESINSKI. How about cancer and TB, et cetera?

Mr. DORAN. All commissioned officers.

Dr. TERRY. Mr. Lesinski, may I say just a word there?

Mr. LESINSKI. Military?

Dr. TERRY. Of our roughly 33,000 employees in the Public Health Service, approximately 28,000 or slightly above, are employed on a civil service basis. The commissioned corps of the Public Health Service consists of professional persons; physicians, dentists, veterinarians, scientists, and some nurses, are covered under the commissioned corps of the Public Health Service, which is one of the uniformed services.

And during the war it is commonly made a part of the military services. It is a commissioned corps similar to that of the military services and includes about 4,500 of our active duty officers today.

They may be scientists at NIH, they may be physicians under the Indian health program, or they may be in any area in the Public Health Service.

Mr. LESINSKI. In other words, you have civil service retirement, you have military retirement, and you have this retirement set up here of retired officers?

Dr. TERRY. No, sir. Let me get it clear.

The commissioned officers are eligible for a retirement system under the Public Health Service Commissioned Corps System, which is similar to the military.

Mr. LESINSKI. But separate?

Dr. TERRY. A person is either employed as a commisisoned officer or as a civil service employee.

If he is employed as a civil service employee, he is eligible for civil service retirement benefits.

If he is employed as a commissioned officer, he is eligible for commissioned officer retirement benefits.

Mr. LESINSKI. I understand that.

But this is a separate retirement from civil service, correct?

Dr. TERRY. Yes, sir.

Mr. LESINSKI. That is the point I made, you have civil service, you have—in other words, you have, in Government, three types of retirement: civil service, commissioned officers, which you are concerned with at the present time, and your regular military.

Mr. KELLY. The Government does.

And some Government employees are under social security retirement.

Mr. LESINSKI. Commissioned officers, who handled this retirement, you, Public Health, or who?

Dr. TERRY. Yes, sir; we handle it.

PAYMENTS TO RETIREMENT FUND

Mr. LESINSKI. Do they pay any portion of the pay in the retirement fund?

Dr. TERRY. No, sir.

Mr. LESINSKI. Civil service personnel do?

Dr. TERRY. Yes, sir.

Mr. LESINSKI. As the military does.

Dr. TERRY. Yes, sir.

It is identical in that respect.

Mr. LESINSKI. No further questions.

Thank you.

Mr. FOGARTY. Mr. Laird.

Mr. LAIRD. No questions.

Mr. FOGARTY. Thank you, Doctor.

SALARIES AND EXPENSES, OFFICE OF THE SURGEON GENERAL

WITNESSES

DR. DAVID E. PRICE, DEPUTY SURGEON GENERAL
DONALD F. SIMPSON, EXECUTIVE OFFICER
DR. LUTHER L. TERRY, SURGEON GENERAL
HARRY L. DORAN, CHIEF FINANCE OFFICER
JAMES F. KELLY, DEPARTMENT BUDGET OFFICER

Object classification

[In thousands of dollars]

		1962 actual	1963 estimate	1964 estimate
11	Personnel compensation:			
	Permanent positions	4,071	4,429	4,708
	Positions other than permanent	23	35	35
	Other personnel compensation	16	5	38
	Total personnel compensation	4,110	4,469	4,781
12	Personnel benefits	355	388	410
21	Travel and transportation of persons	157	159	179
22	Transportation of things	26	12	12
23	Rent, communications, and utilities	217	144	149
24	Printing and reproduction	167	177	183
25	Other services	74	58	64
	Services of other agencies	231	152	199
26	Supplies and materials	50	55	59
31	Equipment	79	49	54
	Total obligations	5,467	5,663	6,091

Personnel summary

	1962 actual	1963 estimate	1964 estimate
Total number of permanent positions	616	628	628
Full-time equivalent of other positions	3	5	5
Average number of all employees	564	576	588
Number of employees at end of year	594	586	598
Average GS grade	7.8	8.1	8.2
Average GS salary	$6,943	$7,548	$7,584

Program and financing

[In thousands of dollars]

	1962 actual	1963 estimate	1964 estimate
Program by activities:			
1. International health activities	194	198	224
2. Management and central services	5,234	5,465	5,867
3. Adjustment of prior year costs	−48		
Total program costs, funded [1]	5,380	5,663	6,091
Change in selected resources [2]	86		
Total obligations	5,467	5,663	6,091
Financing: Unobligated balance lapsing	94		
New obligational authority	5,560	5,663	6,091
New obligational authority:			
Appropriation	5,375	5,850	6,091
Transferred (42 U.S.C. 226) from—			
"Dental services and resources"	100		
"Nursing services and resources"	32		
"Radiological health"	20		
"Water supply and water pollution control"	34		
Transferred to (−)—			
"Operating expenses. Public Buildings Service," General Services Administration (75 Stat. 353)	−1		
"Community health practice and research" (42 U.S.C. 226)		−187	
Appropriation (adjusted)	5,560	5,663	6,091

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[1] Includes capital outlay as follows: 1962, $74,000; 1963, $81,000; 1964, $54,000.

[2] Selected resources as of June 30 are as follows: Unpaid undelivered orders, 1961, $116,000 (1962 adjustments, −$48,000); 1962, $154,000; 1963, $154,000; 1964, $154,000.

GENERAL STATEMENT

Mr. FOGARTY. We will take up salaries and expenses, Dr. Price, you may insert your prepared statement in the record.

(The prepared statement follows:)

Mr. Chairman and members of the committee, last year when Dr. Porterfield appeared before this committee he told you about some of the organizational changes that had taken place in the Office of the Surgeon General and about others that were under consideration. The very rapid growth of the Service in recent years has made the task of managing and directing this vast organization more difficult and complex than ever before. New methods of operation, different organizational patterns and different professional skills are required to meet the challenge. The Surgeon General's Committee on Organization and the Folsom Committee made specific recommendations with respect to changes that should be made. During the past year we have made significant progress toward the recommended goals and we are submitting further proposals in this budget for your consideration.

The Surgeon General has told you about the assignment of Dr. Allen to serve as grants policy officer for the entire Service. Other forward steps that we have taken include such things as the appointment of two patent attorneys as recommended in the report of this committee last year and the appointment of Mr. Paul Caulk, former executive officer, to the newly established post of

Assistant to the Surgeon General for Field Activities. His headquarters are at Phoenix, Ariz. He will pay particular attention to our many activities located in the southwestern part of the Nation. We were fortunate in obtaining the services of Mr. Donald Simpson as our new executive officer. Mr. Simpson came to us from the Department of State but he is thoroughly familiar with our problems, having served previously in high level positions in both the Public Health Service and the Office of the Secretary.

The most significant organizational change affecting the distribution of funds concerns the Division of Public Health Methods. A net transfer of 24 positions and $187,000 has been made to the Division of Community Health Services in the Bureau of State Services. The functions transferred include studies regarding the organization of health services and work in the field of medical economics. Both of these areas are closely related to work of the Division of Community Health Services. Another change involving the Division of Public Health Methods was the transfer of responsibility for editing and publishing Public Health Reports, our principal scientific journal, to the Office of Information—$180,000 and 17 positions are utilized in this operation.

We made quite a number of other minor shifts of personnel, mostly for the purpose of putting related activities together in the interest of better management. For example, two employees responsible for the issuance of identification cards were transferred from the Division of Administrative Services to the Office of Personnel and three employees responsible for coordinating our construction activities were moved from the immediate Office of the Surgeon General to the Division of Administrative Services, which has responsibility for real property management. The net result of all such shifts is reflected in the 1963 column of the estimate before you.

Our 1964 estimate of $6,091,000 and 628 positions reflects an increase of $428,000 over the amount available for 1963. The actual increase over 1963 after adjustment for activities that will be provided for in other appropriations next year is 27 positions and $632,000. The increases fall into three broad categories. First, we need $229,200 to maintain our present employment level and at the same time meet mandatory increases for items such as increased pay rates which become effective in 1964, two extra workdays in 1964, payments to the Department of Labor for medical care, and annualization costs of new positions. Then we are asking for restoration of $175,000, representing program curtailment this year for the purpose of absorbing increased pay costs. Program increases include 4 positions and $40,500 for the immediate Office of the Surgeon General, 5 positions and $42,200 for the Division of Finance, and 18 positions and $140,100 for the Office of Personnel.

You have heard previously of plans for dealing with the problem of communication of health information. The four positions requested for the immediate Office would all be used to assist the Surgeon General in the direction of these programs.

The Division of Finance has made significant progress in the use of automatic data processing thereby dealing with an ever-increasing number of accounting transactions without increases in personnel. In addition to a great increase in volume of work there has been an even greater increase in complexity due in large part to negotiation and audit of terms and conditions of cost-type contracts. To deal with these new problems $42,200 is requested to provide five additional positions in 1964.

The most important change proposed for fiscal year 1964 concerns the Office of Personnel. The recent report of the Folsom committee was critical of Service personnel programs for not having kept pace with program expansion. The report recommended that we develop a strong staff personnel organization in the Office of the Surgeon General and proposed that operating functions be delegated to the bureaus. Specifically, the Folsom committee stated, "[the] unsystematized approach to personnel management may well have worked in the days when the Service was a small, tightly knit organization, its programs fewer and simpler to operate, its jobs prizes in a depressed labor market. But those times are past. The exigencies of today demand a creative, planned, and systematic approach to personnel [administration]." The committee went on to stress urgent need for—

(*a*) Effective long- and short-range planning for manpower needs of the Service.

(*b*) Strong and sustained central interbureau recruiting program.

(*c*) Coordination of recruitment, assignment, and training to facilitate career development.

(*d*) Evaluation and counseling of individuals to obtain maximum utilization of Service manpower resources.

(*e*) Publication of clear delegations of personnel appointing, classification, etc., authority, and policy and procedural guides for decentralized personnel operations.

In line with these recommendations, our 1964 budget proposes substantial changes in personnel operations. This year we have 174 positions and $1,600,500 for activities of the Office of Personnel. We propose to decentralize operating functions involving 24 positions and $179,000 to the bureaus. New activities aimed at correction of the deficiencies pointed out by the Folsom committee will require 18 positions and $140,100.

In summary, Mr. Chairman, I would say that we are keenly aware of our responsibility for the effective overall management of the Service. The rapidity with which our programs grow adds to the challenge and increases the need for versatility in manpower and organization to deal effectively with new situations. While we take satisfaction in the progress that has been made, we know that much more needs to be done. Our 1964 request for $6,091,000 will provide the funds required for continued progress.

I shall be glad to answer any questions that the committee may have.

Dr. Price. Mr. Chairman and members of the committee, the very rapid growth of the Service in recent years has made the task of managing and directing this vast organization more difficult and complex than ever before.

New methods of operation, different organizational patterns, and different professional skills are required to meet the challenge.

The Surgeon General's Committee on Organization and the Folsom committee made specific recommendations with respect to changes that should be made.

During the past year we have made significant progress toward the recommended goals and we are submitting further proposals in this budget for your consideration.

TRANSFERS FROM DIVISION OF PUBLIC HEALTH METHODS

The most significant of several organizational changes concerns the Division of Public Health Methods.

A net transfer of 24 positions and $187,000 has been made from this Division to the Division of Community Health Services in the Bureau of State Services.

The functions transferred include studies regarding the organization of health services and work in the field of medical economics.

Both of these areas are closely related to work of the Division of Community Health Services.

Another change involving the same Division was the transfer of responsibility for editing and publishing Public Health Reports, our principal scientific journal, to the Office of Information; $180,000 and 17 positions are utilized in this operation.

INCREASE REQUESTED FOR 1964

Our 1964 estimate of $6,091,000 and 628 positions reflects an increase of $428,000 over the amount available for 1963. The actual increase over 1963 after adjustment for activities that will be provided for in other appropriations next year is 27 positions and $632,000.

The increases fall into three broad categories.

First, we need $229,200 to maintain our present employment level and at the same time meet mandatory increases for items such as increased pay rates which become effective in 1964, 2 extra work days in 1964, payments to the Department of Labor for medical care, and annualization costs of new positions.

Then we are asking for restoration of $175,000 representing program curtailment this year for the purpose of absorbing increased pay costs.

Program increases include 4 positions and $40,500 for the immediate Office of the Surgeon General, 5 positions and $42,200 for the Division of Finance, and 18 positions and $140,000 for the Office of Personnel.

CHANGES IN PERSONNEL OPERATIONS

The most important change proposed for fiscal year 1964 concerns the Office of Personnel. The recent report of the Folsom committee was critical of Service personnel programs for not having kept pace with program expansion.

The report recommended that we develop a strong staff personnel organization in the Office of the Surgeon General and proposed that operating functions be delegated to the bureaus.

Specifically, the Folsom committee stated:

> [The] unsystematized approach to personnel management may well have worked in the days when the Service was a small, tightly knit organization, its programs fewer and simpler to operate, its jobs prizes in a depressed labor market.
>
> But those times are past. The exigencies of today demand a creative, planned, and systematic approach to personnel (administration).

In line with these recommendations, our 1964 budget proposes substantial changes in personnel operations. This year we have 174 positions and $1,600,500 for activities in the Office of Personnel.

We propose to decentralize operating functions involving 24 positions and $179,000 to the bureaus. New activities aimed at correction of the deficiencies pointed out by the Folsom committee will require 18 positions and $140,100.

In summary, Mr. Chairman, I would say that we are keenly aware of our responsibility for the effective overall management of the Service.

The rapidity with which our programs grow adds to the challenge and increases the need for versatility in manpower and organization to deal effectively with new situations.

While we take satisfaction in the progress that has been made we know that much more needs to be done. Our 1964 request for $6,091,000 will provide the funds required for continued progress.

I shall be glad to answer any questions the committee may have.

Mr. Fogarty. Thank you, Doctor.

The 1963 appropriation adjusted for the transfer to community health practice and research is $5,663,000 and the request for 1964 is $6,091,000 an increase of $428,000.

PERSONNEL INCREASE

The table on page 68 shows no increase in personnel but this is a little misleading. Actually, there is an increase of 27 positions requested for 1964 for the work currently carried out by this office. Isn't that correct?

Dr. Price. The explanation for this, sir, I think, is that in the transfer of the community health practice and research program, our table has already been corrected for the decrease in those personnel.

Then, we have transferred out of our Division of Administrative Services, 3 positions for the decentralization of personal property management to bureaus and 24 positions from the Office of Personnel for the decentralization of personnel operations, making a total decrease of 27 positions.

Mr. Fogarty. Well, the table is a little misleading, as far as the committee is concerned, but you say in your statement "The actual increase over 1963 after adjustment for activities that will be provided for in other appropriations next year is 27 positions and $632,000."

Is most of this increase due to the report of the Folsom committee?

DUTIES OF NEW POSITIONS

Dr. Price. The portion of the increase which is resulting from the report of the Folsom committee is 18 additional positions in our Office of Personnel.

Mr. Fogarty. Give us the breakdown of the other nine then.

Dr. Price. The other nine are five positions in our Division of Finance and four positions——

Mr. Fogarty. What are they? What do you need them for?

Dr. Price. Two of these positions will be budget analysts, one of which will deal primarily with financial planning for our environmental health programs and for our construction activities.

The other will be devoted to financial planning for other program activities in the Service.

Two of the five new positions would be for systems accountants to assist in the development of means for utilizing our automatic data processing equipment for handling a larger portion of our accounting workload and one will be for a procedures analyst to review and recommend improvements and update our financial management procedures throughout the Service.

Of the four new positions in the immediate office of the Surgeon General, all four of these will be devoted to staff activities on the development of communications programs in the Service and serving to coordinate the development of the various bureau and division activities.

Two of these positions will be professional or technical individuals and two will be clerical personnel to assist them.

ABSORPTION OF PAY ACT COSTS

Mr. Fogarty. I notice in several places in the justifications you point out that you had to absorb pay act and other mandatory costs in 1963 and now are asking for restoration of this cut in 1964. Why did you not ask for a supplemental appropriation for 1963?

Dr. Price. We were able to absorb the pay cost increase to the extent of $175,000 with less impact in this particular appropriation than in many others, because we were in the midst of reorganization of our Division of Administrative Services and the reorganization of our personnel activities during the early part of the fiscal year so that our employment was depressed at that point and the delay in filling positions enabled us to absorb this amount.

INTERNATIONAL HEALTH ACTIVITIES

Mr. FOGARTY. I asked the Secretary but did not get a very good answer. Why are the international health activities being held down?

Dr. PRICE. Well, as you noted, we have no increase in positions for our international health activities this year.

Mr. FOGARTY. The justifications point out that this office has increasing responsibilities, and obviously activities in this field are expanding greatly throughout the Department, but the top Public Health Service office is buried and apparently forgotten.

How many professional people are there in this work in your office?

Dr. PRICE. We have, at the present time, 7 professional positions.

ORIGINAL REQUEST

Mr. FOGARTY. The budget is for $224,000. Was this your original request, $224,000?

Dr. PRICE. No, sir. This was not our original request.

Mr. FOGARTY. What was your original request?

Dr. PRICE. The original request was $561,000 and 50 positions.

Mr. FOGARTY. They cut your request right in half, did they not? More than half? Who did this? The Department or the Bureau of the Budget?

Dr. PRICE. Well, this was a two-step reduction—the Department made the initial reduction and there was a subsequent reduction made by the Bureau of the Budget.

Mr. FOGARTY. I was under the impression that this was a very important program.

Mr. LAIRD. I don't like to stop progress. Perhaps we are going to have a third step.

REPORT ON INTERNATIONAL ACTIVITIES IN THE PUBLIC HEALTH SERVICE

Mr. FOGARTY. We will place your report on international activities in the record.

(The report follows:)

INTERNATIONAL ACTIVITIES OF THE PUBLIC HEALTH SERVICE

The Public Health Service is primarily a resource in the field of international health. It cooperates with national and international agencies, governmental and nongovernmental, by providing scientific information, expert advice, technical assistance and in some instances financial support to international health programs. This is much the same relationship as it has with the States, local communities, and domestic institutions in our country with the exception that substantial financial support is given to our States. It provides support to the World Health Organization, which also is a primary resource in the health field for its 117 members, each of which develops and administers its own health program.

During the past 20 years, the United States has played an increasingly important part in the world health, directly in its programs under the Marshall plan and point 4 and their successor bilateral agencies, and multilaterally through the World Health Organization, the Pan American Health Organization, the

United Nations Children's Fund, and other agencies of the United Nations Organization.

Our Government joined with others in convening the International Health Conference of 1946 at which Surgeon General Thomas Parran of the Public Health Service was elected President. He guided the Conference in the drafting and adoption of the constitution of the World Health Organization by 62 signatory powers.

The Public Health Service is the official technical liaison of the U.S. Government with the World Health Organization. Beginning with the first World Health Assembly, the Surgeon General of the Service has served as chief U.S. delegate to each of the 45 World Health Assemblies except 1, and PHS medical officers have been the U.S. designated members to the executive board. Ninety-one Public Health Service specialists are members of the World Health Organization's expert advisory panels in 39 fields.

In a sense, the creation of the World Health Organization was the culmination, on a worldwide basis, of an effort begun 46 years previously when the United States participated in the organization of the first hemispherewide health organization, later to become the Pan American Sanitary Organization, and its Secretariat, the Pan American Sanitary Bureau. With the creation of WHO in 1948, the Pan American Sanitary Bureau was designated the regional office for WHO in the Americas. Since the beginning of the Pan American Sanitary Bureau, the first permanent international health agency, the Public Service has supplied personnel and technical support. For 34 years (1902–36) the Surgeon General of the Public Health Service was also the Director of the Pan American Sanitary Bureau. The present Assistant Director is a Public Health Service Officer serving through an arrangement which permits the Service to assign officers to PAHO and WHO on request.

This tie has brought the Public Health Service intimately into the family of the World Health Organization.

Likewise, the bilateral assistance provided by the U.S. Government in health began in this hemisphere with the inter-American health programs. With the expansion of the program to Africa, Greece, Turkey and southeast Asia under the Marshall plan and point 4, the Public Health Service became an active participant utilizing many of its officers who had obtained foreign experiences while detailed to UNRRA and the various military commands.

This active participation of the Public Health Service in the bilateral program continues. Currently, 73 PHS officers are assigned to AID and 45 officers are detailed to the Peace Corps. These officers fill professional and administrative positions in headquarters and field staffs. The technical, research and clinical facilities of the Service are made available to AID and the Peace Corps on a contract basis, and through this device the Service is currently providing assistance in insect control, clinical research, and surgical care. It will be of interest to the committee that under an agreement with the Agency for International Development the Public Health Service has fielded four surgical teams consisting of surgeons, nurses, anesthetists, and laboratory technicians to provide care particularly for civilian casualties in South Vietnam. These teams are performing superbly under difficult conditions in the provincial hospitals of that country.

Within the context of its own responsibilities, the Public Health Services believes it is the intent of Congress that the Service uses its longstanding relationships with professional organizations, the health profession, educational institutions, and voluntary agencies in our country to support and further our country's renewed effort in technical service for peace. The Service is endeavoring to do this through its international exchange mission programs, international research activities, its cooperative epidemiological and quarantine programs and other foreign activities arising out of the expanding domestic programs.

The passage of the International Health Research Act of 1960 gave recognition to the importance of international collaboration in research in the health sciences, research training, and the planning of research.

It has given impetus to programs either directly sponsored or administered by the Public Health Service overseas, or in which the Service cooperates with other agencies of the U.S. Government, with international agencies or foreign governments.

During the past 12 months, 1,181 foreign scientists and health administrators visited the facilities of the Public Health Service in the Washington area for observation and consultation, and 1,086 Public Health Service scientists were sent to foreign countries for consultation and conferences. These consultations covered the full scope of the health sciences—from air pollution, shellfish sanitation to arbor virus research and cancer. In addition, 527 foreign health workers from 92 countries were provided program guidance and backstopping for professional study at American universities, hospitals, and other health institutions. Research training and experience were exchanged with 190 foreign scientists working in the laboratories of the National Institutes of Health and 92 working in universities and other health research institutions in the United States; and 335 American scientists received similar experience and training in foreign laboratories.

To supplement knowledge being obtained from American laboratories, 804 research grants totaling $13.2 million were awarded by the Public Health Service to international organizations, and to institutions and investigators in foreign countries. It should be noted here that the international medical research program is further expanded through grants to U.S. institutions in behalf of highly qualified scientists who supervise or conduct research training. Foreign scientists may participate in such training under special conditions. During fiscal year 1962 approximately 10 percent of training stipends were paid to foreign nationals. This represents about 1,000 people who bring a new dimension to the research they undertake during their stay in this country.

In carrying out the intent of Congress as expressed in section 104(k) of the Foreign Agriculture Assistance Act of 1954 (Public Law 83–480), the Public Health Service is developing collaborative research projects in each of the nine foreign countries in which excess currency funds are available for these purposes. Under this program, two Communist bloc countries, Poland and Yugoslavia, have been collaborating with the United States.

To coordinate and provide surveillance of Public Health Service activities abroad, to stimulate the flow of scientific information on medical research abroad, and to evaluate oversea research potential, the National Institutes of Health has established oversea offices in Paris, London, Rio de Janeiro, Tokyo, and New Delhi. Officers assigned to these offices work with oversea science personnel of the Department of State and other Government agencies as integral parts of teams representing U.S. science in Western Europe, the British Isles, Latin America, the Pacific, and south Asia. Coordination at the Washington level is accomplished by close working relationships with the Office of the President's Science Adviser, and through membership on the International Committee of the Federal Council on Science and Technology. The Public Health Service has assigned a scientist to the Office of International Scientific Affairs in the Department of State to further coordination of activities of the two agencies, and an office is being assigned to the mission in Geneva to effect technical liaison between the Service and the World Health Organization.

A more formal arrangement was negotiated with the Soviet Union in 1956 for the exchange of information in the medical sciences. The latest agreement concluded in 1962 provides for the reciprocal exchange of 9 missions and upward of 25 individual scientists between the 2 countries during the calendar years 1962–63. Since the inception of the program for which the Surgeon General has responsibility for U.S. participation in the health and medical science exchanges under the overall agreement negotiated by the Department of State, a total of 95 U.S. scientists have visited the U.S.S.R. as members of official delegations, and 71 Russians have been entertained by the United States in such fields as virology, biochemistry, endocrinology, metabolic diseases, infectious diseases, cancer, neurophysiology, and radiobiology. In addition, United States-U.S.S.R. scientists have held joint meetings on polio, cardiovascular diseases, cancer, and rheumatic diseases.

The National Library of Medicine, a bureau of the Public Health Service, through its scientific exchange programs which include Russia and other Communist bloc medical publications, has been able to introduce American medical publications into the scientific literature in these countries and has provided translations of Communist medical publications for American medical scientists. Its basic publication, "Index Medicus," is worldwide in scope. It is of interest to note here that over 10 percent of photo duplication done by the library goes overseas in response to individual requests.

Perhaps the most direct program aimed at the advancement of health sciences arising out of the International Health Research Act of 1960 has been the establishment and support of International Centers for Medical Research and Training. Under collaborative agreements between American universities and foreign counterparts, research and research training for American and foreign medical investigators are related to specific research and training for American scientists in the overseas institutions under conditions not found in the United States. Five such centers have been established. They have been singularly successful in attracting competent young scientists into the international field.

The Public Health Service administers the Cholera Research Laboratory in Dacca, Pakistan. This is, in fact, an autonomous international project operating under an agreement between the Government of Pakistan and the United States with provision for adherence by other nations. The laboratory, which is concerned with all phases of cholera research, is the only one of its kind in the world, and serves as a center for research training in Pakistan. It is supported in part by Pakistan, by AID, and through Public Law 480 funds by the NIH.

At the request of the Government of Ghana, staff of the National Institutes of Health are presently working with African scientists in Accra to upgrade health research and at the same time to delve into problems for answers which will have application to research undertaken here. In addition to setting up a clinical research unit for precise observation of patients under a high degree of control, the group is studying the histochemistry of tropical diseases, the biochemistry of parasites and parasite vectors; and a field unit is assessing vaccines and chemotherapy.

The Middle America Research Unit, a field station of the Public Health Service located in the Canal Zone, studies virus and fungal diseases of the tropics. It maintains active professional contacts with cooperating organizations concerned with health and medical research in the countries of Central, nearby South America, and the Carribean, and works closely with the Gorgas Memorial Laboratory, the Army Medical Service, and the Pan American Health Organization.

A group of scientists from the Laboratory of Tropical Diseases is working at the Institute of Medical Research in Kuala Lumpur, Malaya, studying in its natural environment the malaria which affects monkeys, its vectors, and its potential as a reservoir for the disease in humans.

Another program which has wide application to international health is that of the Interdepartmental Committee on Nutrition for National Defense. The main function of this program is to organize and carry out detailed nutrition surveys in developing countries to define food and nutrition problems, train counterpart scientists, and develop practical measures to insure maximum utilization of local resources. The operating secretariat is located in the National Institutes of Health, and membership consists of the Departments of State, Defense, Agriculture, Health, Education and Welfare, the Agency for International Development, and Atomic Energy Commission. Close liaison is maintained with international agencies having interests in the fields of health and nutrition. To date surveys have been completed in 21 countries. In seven of these, only the military population was studied; in the remainder both military and civilian populations were studied with major emphasis on such groups as infants, schoolchildren, pregnant mothers, and laborers.

In all these countries major problems and means of correcting them have been identified. Institutes of nutrition have been established and in most cases government coordinating committees have been set up for planning and implementation of nutrition programs.

Communications in the health and medical sciences have become increasingly important to the most effective use of manpower and funds as the worldwide tempo of research and development increases. A major tool in this field is the international meeting at which personal interchange of information can take place, and new research avenues explored. During 1962 46 grants for support of international meetings were awarded and the Service sponsored either directly, or jointly with international organizations, major meetings on such problems as air pollution, nutrition, and health education.

Among the oldest activities of the Public Health Service have been the quarantine inspection of persons entering the United States and the medical examination of aliens. The United States has enjoyed 16 years of freedom from the outbreak of a quarantinable disease known to have been introduced from abroad. Yet the expansion in international travel since World War II, and in particular the increase in the volume and speed of travel, have intensified quarantine problems. In maintaining our vigilance, the Public Health Service has enjoyed the full cooperation of the World Health Organization whose responsibility is to pinpoint foci of quarantinable diseases and to marshal worldwide support for their isolation, control, and eradication. The experience the Public Health

Service has gained in its 85 years of quarantine activities as well as our modern procedures emphasizing the immunization and inspection of travelers, insect and rodent control, and sanitation of conveyances are shared with other nations through the Service's participation in meetings of the Expert Committee on International Quarantine convened by the World Health Organization and the cooperative enforcement of the international sanitary regulations agreed to by member nations.

The international programs of the Public Health Service are growing in number and in diversity as more recognition is given to the interrelationship of our own problems, their solutions and those of other countries, and to the importance of health as a factor in world peace.

Mr. FOGARTY. Mr. Denton.

BUREAU OF EMPLOYEES COMPENSATION PAYMENTS

Mr. DENTON. I notice that you pay $39,700 to the Department of Labor. Is that for workmen's compensation?

Dr. PRICE. It is, sir.

Mr. DENTON. How many employees does that cover?

Mr. DORAN. This is sort of a retroactive arrangement whereby they inform us after the end of the year what the cost was.

Mr. DENTON. It is just what the Labor Department has paid out for injuries to Public Health employees?

Mr. DORAN. Yes, sir.

Dr. PRICE. This is based, sir, on actual experience in 1962.

Mr. DENTON. Could you give me a rough idea how many employees in the Public Health Service would be covered by workmen's compensation?

Mr. DORAN. About 28,000. This does not cover all. This is only for the Office of the Surgeon General.

Mr. DENTON. How many are in the Surgeon General's Office?

Mr. DORAN. This covers the appropriation "Salaries and expenses" and the Library of Medicine and the Center for Health Statistics. There will be approximately 1,000 persons.

Mr. DENTON. That only covers 1,000?

Mr. DORAN. Approximately 1,000.

Mr. DENTON. Where does this item come in other places in the budget?

Mr. DORAN. Well, in the Bureau of State Services and in the National Institutes of Health, it appears in the management fund. It is also budgeted in "Hospitals and medical care," "Foreign quarantine activities," "Indian health activities," and "Emergency health activities."

Mr. DENTON. Let's say that a man working in the Coast Guard gets hurt, and they pay him compensation. Where does that show up in this appropriation?

Dr. TERRY. Mr. Denton, in respect to that, we furnish the medical care for the Coast Guard. So that if it were a physician or an engineer or a dentist who belongs to the Public Health Service but is assigned to the Coast Guard, it would be Public Health Service.

On the other hand, if it were a regular Coast Guard contingent, it would be in their budget in the Coast Guard.

Mr. KELLY. Assume that it was a civilian——

Mr. DENTON. Suppose someone is hurt in a hospital. Where would you find that payment budgeted?

Mr. Kelly. An employee of the Public Health Service?

Mr. Denton. Yes.

Mr. Kelly. If the Bureau of Employees Compensation made a payment on his behalf, half of it would appear under "Hospitals, medical care" appropriation.

Mr. Denton. This is the first time I have seen this item. That is the reason I am asking you about it.

It would appear under Department of Labor, just as it is here?

Mr. Kelly. That is right. Just as it is here.

OTHER SERVICES

Mr. Denton. Now, there is one other item I want to ask you about. On page 69, "Other services." What does that embrace this time?

Mr. Doran. It covers the following: The cost of tabulating and coding, $107,400.

The services of the American Public Health Association, merit system development group; repairs and maintenance of office machines; repairs of equipment; partitioning; moving; repairs to buildings and related services, $36,650.

Construction and repairs to exhibits, $19,800.

Procurement and printing service charges, $3,600.

The reimbursement to Bureau of Employees Compensation, $40,000.

Reimbursement to Department for acquisition of medical books for the department library, $5,000.

Training, tuition costs, $5,200.

Personal service contracts, $1,000.

Salaries of telephone operators, $5,900.

Miscellaneous, $8,900.

Security clearance costs, $2,050.

Automatic data processing, $5,500.

Mr. Denton. Item 24 on page 69 had "Printing and reproduction;" and item 31 has "Equipment."

It looks to me like you have duplicates there, with other services.

Mr. Doran. No. The printing is a separate classification. It is set out separately, and it includes such things as the publication of the Public Health Reports which is the principal scientific journal of the Public Health Service.

Mr. Denton. This equipment you rent anyhow, do you not?

Mr. Doran. Well, the rental of equipment comes under "Other services."

Mr. Denton. But there is an item for equipment. "31—Equipment."

Mr. Kelly. About the only equipment we rent is the computer type of equipment and EAM equipment. This would include the purchase of typewriter desks, adding machines, calculators, and so forth.

Mr. Denton. I see. The repairs you do under other services—typewriters and so on?

Mr. Kelly. That is right.

Patent Policies

Mr. Denton. Now, are you the one that is going to let me look at the patent clause in your contracts?

Dr. PRICE. I would be very glad to answer any questions you may have, Mr. Denton.

Mr. DENTON. I would like very much to read the clause, if I could.

Dr. PRICE. I do not know whether I have, with me, the precise wording of the clause that is in our contracts. I would like to provide that.

Mr. DENTON. It does not do me much good to tell me about it unless I can read it.

CONTRACT PATENT CLAUSE

Dr. PRICE. I would like to provide that for the record, sir.

(The information follows:)

20. PATENT RIGHTS

(*a*) Whenever any invention, improvement, or discovery (whether or not patentable) is made or conceived or, for the first time, actually or constructively reduced to practice, by the contractor or its employees, in the course of, in connection with, or under the terms of this contract, the contractor shall immediately give the contracting officer written notice thereof and shall promptly, thereafter, furnish the contracting officer with complete information thereon; and the Surgeon General shall have the sole and exclusive power to determine whether or not and where a patent application shall be filed, and to determine the disposition of all rights in such invention, improvement, or discovery, including title to and rights under any patent application or patent that may issue thereon. The determination of the Surgeon General on all these matters shall be accepted as final and the provisions of the clause of this contract entitled "disputes" shall not apply; and the contractor agrees that it will, and warrants that all of its employees who may be the inventors will, execute all documents and do all things necessary or proper to the effectuation of such determination.

(*b*) Except as otherwise authorized in writing by the contracting officer, the contractor shall obtain patent agreements to effectuate the provisions of this clause from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will have no access to technical data.

(*c*) Except as otherwise authorized in writing by the contracting officer, the contractor will insert in each subcontract, having experimental, developmental, or research work as one of its purposes, provisions making this clause applicable to the subcontractor and its employees.

Mr. DENTON. I have been trying to find out about it all through this hearing.

PATENTABLE DISCOVERIES BY DEPARTMENT PERSONNEL AND GRANTEES

Dr. PRICE. I would like to comment about this while I have the opportunity, if I may, because I think it is of some significance.

Our Department operates under the philosophy that inventions that are made in the course of work related to health research and in the operations of our Department ought to be freely available for public use. There is a feeling that much of the inventive advances made in the field, such as ours, have relatively little commercial value, and are primarily important as advances in information, and, consequently, ought to be published and become available through the scientific literature for general use and application.

Consequently, this procedure has been adopted to govern our employees, our grantees, and our contractors. And the basic provision which we have for our employees is that if they make an invention which is related to their work, utilizing facilities of the Government and Government time they have an obligation to report this invention.

We have a procedure where we attempt to evaluate its potential importance; whether it is something that is worth going to the trouble of filing. We will, under those circumstances, file; and the rights to the invention will be vested in the Secretary of the Department.

Mr. DENTON. Do you give the employees a license on that—what is called a "shop right" in those cases?

Dr. PRICE. The employee, under these circumstances, does not have a personal shop right.

Mr. DENTON. It is your theory that you hire him to discover things, and he was working with your money when he acquired it and therefore, he does not have that right.

Dr. PRICE. Under these circumstances, the invention is, in effect, dedicated to the public and licenses are available to anyone who may desire a license.

Now, in our contract and grant programs, we have a requirement that inventions are reported and we reserve to the Surgeon General the right to determine whether or not the patents shall be applied for and how the patent rights shall be administered.

It is our practice, under these circumstances, to handle the patent rights in the same way that we do if they arise from an employee invention.

Mr. DENTON. I understand.

If a pharmaceutical company has a grant from you; and they discover something that is patentable, if a patent is procured, the Government owns the patent on that?

Dr. PRICE. You mentioned pharmaceutical companies; and what you have stated is correct insofar as we might be supporting research through the grant mechanisms.

SPECIAL PROVISIONS FOR PRIOR INDUSTRIAL KNOWLEDGE

If we are operating under a contract—depending on the field in which the research is being done—either this same policy would apply or if it were in the field of cancer chemotherapy drug development, the Department has a special provision which was developed in regulations to apply to that—devised to recognize the prior knowledge of an industrial organization in such a way that if they make an invention in the course of working under our contract, certain rights may be left to the company, but with the provision that if there is evidence that they are violating the public interest, either by seriously repressive practices; not producing the quality or quantity or charging an unreasonable price, that the Government may march in and force a nonexclusive licensing.

Mr. DENTON. Let me see if I understand this correctly. If the pharmaceutical company establishes some invention, but in doing that they use something that they have already patented, they still retain their patent on what they already had, unless the conditions arise that you stated, where he is suppressing it, or the Government thinks that they should move in on the grounds that you stated, then the Government can move in and capture that patent that the pharmaceutical company held?

Dr. PRICE. We would not attempt to capture something which the pharmaceutical company already owned at the time they undertook the work.

Mr. DENTON. Yes.

Dr. PRICE. This policy applies to inventive advances that may have been made during the course of carrying out the work under our contract but which may be related to the prior know-how and development of the industrial organization; perhaps they make an invention which is an improvement on a process which they already had a patent on. We would not under those circumstances deny them an interest in this.

I think perhaps on this latter point you would be best informed by reading the Department's regulations which apply to this.

Mr. DENTON. I would rather read the clause in your contracts, if you do not mind.

Dr. PRICE. I will be very pleased to present that.

Mr. DENTON. Thank you.

Mr. FOGARTY. Mr. Lesinski.

SIMILARITY TO AUTO INDUSTRY PROCEDURES

Mr. LESINSKI. In other words, you operate something like the automobile industry does. When they have their own engineers invent something new, the company retains the right to that patent?

Dr. PRICE. Yes, sir.

Mr. LESINSKI. With the exception of the fact that a big corporation like General Motors, which controls 75 percent of the patents in the auto industry, you allow the developer to produce that commodity with the exception that if he does not perform properly of course, you relinquish the rights? Right?

Dr. PRICE. Yes, sir.

Mr. LESINSKI. Meaning you allow somebody else to produce that commodity?

Dr. PRICE. Yes ,sir.

EFFECT OF GOVERNMENT RESEARCH GRANTS ON INCENTIVE TO PRODUCE NEW DRUGS

Mr. LESINSKI. What you are getting around is the point that where a pharmaceutical company, in the development of a new commodity, a new drug on the market it will cost quite a bit of money; therefore, they will not have to add that to the ultimate cost of the product on the market because the Government absorbed that cost of development. Is that true?

Dr. PRICE. Well, I think that is a moot point.

There are those who insist that unless a pharmaceutical company can be given an exclusive right, that they will not put their own money into the development of the drug, and I think there is some evidence that this is the case, particularly when one is dealing with a product that predictably has very, very small use.

I think Dr. Masland, when he was speaking yesterday about the anticonvulsant drugs, talked about the desirability of developing some improved drugs for that small proportion of epileptics, for example, who do not do well on the current drugs and that this was a very difficult thing to interest the pharmaceutical industry in, because they realized that the number of individuals who would become customers for that kind of product, would be very small and the problems of demonstrating its safety for use over long periods of time would be very great and costly.

Consequently, in situations like that, it is quite possible that even exclusive rights would not be enough of an incentive to get the company to undertake the work.

So you have a broad range here of situations, all the way from those in which even exclusive ownership of rights may not be enough incentive, to the other end of the scale, where many industrial organizations would be willing to undertake the development of something which was going to have fairly large volume sales, without having any particular advantage over a competitor, through a period of exclusivity.

Mr. Lesinski. In other words, it might take a million dollars to develop a certain drug as you just mentioned, and because—as you mentioned—again, of the limited need for it, the company, in order to recoup the amount of money invested in that drug, might have to charge $20 for a prescription, whereas in this way, it might only have to charge $1 for the actual cost of manufacturing.

Therefore, the Government picks up the difference in the tab.

PRINTING AND REPRODUCTION

Mr. Doran, you were not quite clear on the difference in the printing. You mentioned one type of printing on your books—publications. How about your other printing? You did not clear that question up.

Mr. Doran. Well, all printing is listed under 24.

Mr. Lesinski. Which is regular publications of the agency.

Mr. Doran. That is right. Printing and reproduction. Under that, we have $38,000 for the publication of bulletins, manuals, and so forth; for duplicating, we request $51,000 and for recruitment pamphlets, $27,000.

Mr. Lesinski. That comes under other services or under printing?

Mr. Doran. That is under printing.

Mr. Lesinski. Now, under other services, what printing is under there?

Mr. Doran. No printing.

Mr. Lesinski. Well——

Dr. Price. The procurement and printing service cost, I think, is the item that Mr. Lesinski is referring to.

Mr. Doran. $3,600 for procurement of printing—service charges.

Mr. Lesinski. Excuse me. When Mr. Denton was asking Dr. Price, under 25, other services, some printing was mentioned as being in there.

Mr. DORAN. Procurement and printing service charges.

Mr. LESINSKI. Service charges?

Mr. DORAN. Right.

Mr. KELLY. When the Public Health Service orders the printing done, either by an outside firm or the Government Printing Office, they send this order through the procurement organization and this $3,600 is the cost of procurement of that outside printing. It is not the cost of the printing, but the cost of contracting or arranging for the printing.

Mr. LESINSKI. Well, I would think it would be under printing and reproduction, that cost to the Public Health Services.

MEDICAL CARE FOR COAST GUARD PERSONNEL

Dr. Terry, is not the Coast Guard under the Treasury Department?

Dr. TERRY. Yes, sir.

Mr. LESINSKI. In relation to what is mentioned here, do you handle the military part of the Coast Guard or the civilian part of the Coast Guard?

Dr. TERRY. We do not handle the civilian part. We provide medical care for that portion of the Coast Guard officers and enlisted men in the Coast Guard proper, but not including their civilian employees.

You may recall, Mr. Lesinski, that at one time, the Public Health Service as well as the Coast Guard was in the Treasury Department and this relationship grew up over a long period of time, and the Public Health Service has continued to provide medical care for the Coast Guard, just as we do for the Coast and Geodetic Survey officers and related people.

Mr. LESINSKI. Civilian employees, or regular civil service employees?

Dr. TERRY. That is right. We do not provide medical care for them.

Mr. LESINSKI. All right.

BUREAU OF EMPLOYEES COMPENSATION PAYMENTS

Now, Dr. Price, payments in the Department of Labor for medical care. Is that the 50 percent under the law, of the Federal employees hospitalization? In other words, the Government pays 50 percent and the employee pays 50 percent?

Dr. PRICE. No. This is the Bureau of Employees Compensation for individuals who are injured in the course of their Federal employment, where, under the law, the Government has the responsibility for their care and rehabilitation.

Mr. LESINSKI. Page 2. Payments to the Department of Labor for medical care.

In other words, you are not talking about medical care. Are you talking about hospitalization did you say, for injury on the job?

Dr. PRICE. This would cover any hospitalization or medical care expense for which the Government is required to provide, as a result of the employees compensation laws.

Mr. Lesinski. I am a little at a loss here, now. There was some talk about payments for unemployment compensation, and then Mr. Denton asked that question. Now, the amount of medical care—according to the Civil Service, the employee has a right of choice of the type of hospitalization he desires, and the Government pays half and he pays half.

What I am confused about is, that is under Civil Service. Now, why is the Labor Department involved in this?

Mr. Doran. Mr. Lesinski, I might give you an example, of one of our employees that fell at work and suffered an injury.

Mr. Lesinski. Wait, Mr. Doran. At that point, do you or do you not have Federal health insurance for the civil service employees?

Mr. Doran. Yes, sir; but that insurance does not cover this kind of an injury. If it is injury on the job, benefits accrue from workmen's compensation.

Mr. Lesinski. If they have social security?

Mr. Doran. Regardless. If a Government employee is injured on duty then it is the responsibility of the Bureau of Employees Compensation Commission to take care of him. Then they charge us if it is one of our employees.

Mr. Lesinski. Well, isn't the health insurance supposed to take care of that?

Mr. Doran. Not if they are covered under the Employees' Compensation Act.

Mr. Kelly. The health insurance specifically excludes those benefits which should be covered under the employees compensation.

Mr. Lesinski. Well, it seems like duplication. That is why I got interested, because you have the Federal employees health insurance, and you have the Federal employees medical care here, and you have the Federal compensation under the Labor Department, under social security, and it just seems that you are duplicating the very thing that we tried to help the Federal employees on, the health insurance program, where the Government pays half and the employee pays half.

Dr. Price. Mr. Lesinski, I think perhaps if one would look at it as one might if he were operating an industrial establishment, where he might participate with his employees in the provision of hospital and medical services for their ordinary sickness, and at the same time, would be required to carry workmen's compensation insurance, to take care of the situation where the employee was injured in the course of his employment, and where there would be a recognition of a peculiar responsibility on the part of the employer.

This particular item is the Government's equivalent of that, for providing specifically for the situation where the employee is injured in line of his work.

Mr. Lesinski. Dr. Price, you are simply following the practice of private industry in taking care of those employees hurt on the job, period.

Dr. Price. That is correct.

Mr. Lesinski. Thank you.

Mr. Fogarty. Mr. Laird.

Mr. Laird. I have no questions, Mr. Chairman.

EFFECT OF UTILIZING COMPUTERS ON NEED FOR PERSONNEL

I would just like to tell Dr. Price that if he is having a little trouble getting more personnel for his international health activities, that perhaps what he should do is to put in an application for a computer. That seems to be a sure way of increasing personnel.

Dr. PRICE. I appreciate that suggestion, sir.

INCREASE IN APPROPRIATIONS DURING LAST 10 YEARS

Mr. LESINSKI. Might I make one comment here? I meant to do it and I failed at the time of my questioning.

It seems to me you are the only one in the Public Health Service that has only doubled their appropriation since 1954. What happened? Are you people a little slower on the draw than the other agencies, or are you doing a better job?

Dr. PRICE. Well, you know, all of my colleagues sympathize with me for having to defend this particular appropriation because everyone recognizes, that talking only about management services is not a very glamorous thing to defend, and this is a very important part of the program of the Service, and it is the funds which enable the Surgeon General to exercise his responsibilities for management, but we have not had as much spontaneous interest shown in the past in our capabilities in this area as has been true in some of the other programs that are more glamorous.

Mr. LESINSKI. In other words, you are not as glamorous as cancer or TB or some of the other things, or this recent rash of venereal disease. Is that the point?

Dr. PRICE. I am afraid we would have to admit that.

Mr. LAIRD. In all fairness, you ought to say, too, Doctor, that this table showing the appropriation level, does not mean much for comparative purposes because you have had transfers in and out of your office almost every year. Every time one function gets a little too big, you transfer it out some place else. You have a transfer out of 27 positions this year. There have been many such transfers in the last 10 years; so this table, as far as making comparisons is concerned, does not mean a thing.

Dr. PRICE. We are very pleased we have been able to develop a few things to the point where they could be transferred out and stand on their own.

Mr. FOGARTY. Thank you very much, Doctor.

RESEARCH GRANTS AND CONTRACTS AND UNFUNDED APPLICATIONS FOR RESEARCH GRANTS

(Following is the information requested by Mr. Lesinski and Mr. Denton earlier in the hearing (see p. 223):)

Public Health Service

Estimated value of approvable but unfunded applications for research grants and research contracts, 1963

Program and category	1963 budget estimated obligations		Estimated value of approvable but unfunded applications	
	Number	Amount	Number	Amount
Research grants:				
Accident prevention	36	$1,828,000	4	$200,000
Air pollution	120	2,892,000	21	700,000
Milk, food, interstate, and community sanitation	200	3,924,000	45	947,000
Occupational health	61	1,766,000	7	213,000
Radiological health	74	1,545,000	57	1,240,000
Water supply and water pollution control	180	3,285,000	53	1,395,000
General research and services	2,240	52,980,000	----------	0
National Cancer Institute	1,704	53,909,000	----------	0
Mental health activities	1,879	49,765,000	----------	0
National Heart Institute	2,533	74,514,000	----------	0
National Institute of Dental Research	425	8,060,000	41	783,000
Arthritis and metabolic disease activities	2,879	64,530,000	----------	----------
Allergy and infectious disease activities	1,673	35,354,000	182	3,821,000
Neurology and blindness activities	1,634	45,128,000	----------	----------
Special programs:				
International centers for medical research and training (ICMRT)	7	3,692,000	----------	0
Clinical research centers (general)	56	33,500,000	----------	0
Categorical centers:				
Cancer	13	4,833,000	----------	0
Mental	8	2,000,000	----------	0
Heart	19	3,000,000	----------	0
Dental	2	350,000	----------	0
Arthritis	12	1,750,000	----------	0
Allergy	5	975,000	----------	0
Neurology	17	1,500,000	----------	0
Special resource centers	28	5,685,000	8	1,944,000
Primate centers	8	5,120,000	----------	0
General research support	----------	30,000,000	(1)	(1)
Scientific evaluation grants	----------	1,536,000	(1)	(1)
Total, research grants	15,813	493,421,000	418	11,243,000
Research contracts:				
Accident prevention	8	168,000	(1)	(1)
Chronic diseases and health of the aged	27	800,000	(1)	(1)
Community health practice and research	11	229,400	(1)	(1)
Control of tuberculosis	17	183,200	(1)	(1)
Control of venereal diseases	6	106,000	(1)	(1)
Hospital construction activities	1	50,000	(1)	(1)
Air pollution	29	1,400,000	(1)	(1)
Milk, food, interstate, and community sanitation	4	55,000	(1)	(1)
Occupational health	20	246,000	(1)	(1)
Radiological health	55	1,668,000	(1)	(1)
Water supply and water pollution control	25	720,000	(1)	(1)
General research and services	14	933,000	(1)	(1)
National Cancer Institute	315	35,350,000	(1)	(1)
Mental health activities	85	2,050,000	(1)	(1)
National Heart Institute	13	380,000	(1)	(1)
National Institute of Dental Health	3	112,000	(1)	(1)
Arthritis and metabolic disease activities	8	425,000	(1)	(1)
Allergy and infectious disease activities	32	3,700,000	(1)	(1)
Neurology and blindness activities	29	889,000	(1)	(1)
Total, research contracts	702	49,464,600	----------	----------

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[1] Not applicable.

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